

**CONSUMER BEHAVIOUR WITH RESPECT TO  
DOMESTIC WATER IN MAURITIUS  
INCLUDING A MODEL**

**by**

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**SOWDAGUR D.**



# **D E C L A R A T I O N**

**STUDENT NUMBER: 3154-101-1**

I declare that '**CONSUMER BEHAVIOUR WITH RESPECT TO DOMESTIC WATER IN MAURITIUS INCLUDING A MODEL**' is my own work and that all the sources I have used or quoted have been indicated and acknowledged by means of complete references.

**D. SOWDAGUR**

**Date : 10<sup>th</sup> February, 2006**

## ABSTRACT

Literature survey shows that with, a few exceptions, the consumer behaviour of domestic water consumers has not been a common area of research. This explains the scarcity of information in this specific field. This scarcity was noted in the region and very much so in the context of Mauritius. And yet, such information is very much relevant for the management of the water sector, for the improvement of the service, for policy makers, for personal and social development and for achieving consumer satisfaction. This research brings about information that would contribute in its own way to these areas. The object of this thesis is to study the consumer behaviour in respect of domestic water consumers in Mauritius, to develop new theories and to build a consumer behaviour model.

The thesis, at its outset, gives the background of the research. It contains the description of the water supply situation in Mauritius, its production, its distribution and its management. The brief on the people of Mauritius helps to put in the right context the pluricultural nature of the Mauritian society which is important for the understanding of the consumer behaviour of Mauritians.

The literature survey, inter-alia, gives the historical development of consumer behaviour, its relevance to marketing, and its study as a discipline in its own right. The very scarcity of theories and models of consumer behaviour of domestic water consumers cannot be overlooked. The literature survey, therefore, covers some of the theories and models specifically on commodities. These models along with the literature review serve as theoretical foundation for the present research

The models of consumer behaviour which have been literature reviewed have further enabled to construct an integrated model of consumer behaviour which serves as a framework for the discussion and analysis of the new model which is developed during the course of this research.

The research is one mainly of general interest and can be classified as an exploratory research with a substantial contribution of descriptive research. The research has necessitated the collection of primary data. For this purpose, the objective approach was adopted and a consumer survey was carried out with the use of a direct structured questionnaire. The survey has been supplemented by discussions of focus groups. The analysis of the consumer survey is followed by the testing of the hypotheses, the development of theories and discussions on results obtained. The building of a new model of consumer behaviour based on the findings of the research is then undertaken and discussed.

The thesis covers a wide spectrum from the need of a domestic water connection, consumption of domestic water, post-consumption behaviour to the illegal use of water in Mauritius. The thesis winds up with conclusions and recommendations.

The specific topic of this thesis is a rare one. This research is but a step in the furtherance of knowledge. It stands as an original regional contribution to the science of management and to its development.

### **Key Terms**

Domestic Water Consumption, Consumer Behaviour, Water and Mauritius, Consumer of Water, Domestic Water, Domestic Water Consumer, Domestic Consumer, Consumer Behaviour Model.

## LIST OF ABBREVIATIONS

CWA	Central Water Authority
CEB	Central Electricity Board
MT	Mauritius Telecom
CSO	Central Statistical Office
M	Million
m <sup>3</sup>	Metre Cube
Mm <sup>3</sup>	Million Metre Cube
Mm	Millimetre
MAV	Mare aux Vacoas System
PL	Port Louis System
DWS	District Water Supply System
EIB	European Investment Bank
G.N	Government Notice

# **CHAPTER 1**

## **BACKGROUND TO THE STUDY**

### **1.1 INTRODUCTION**

The purpose of the research is to study the consumer behaviour of domestic water consumers in Mauritius and in the process to develop a consumer behaviour model. This chapter gives the background to the research and its objective, and states the problem which is studied.

The study of consumer behaviour has, so far, not attracted much attention in Mauritius. A literature search has revealed the absence of previous research carried out in Mauritius on the specific subject of this thesis, that is, the behaviour of domestic water consumers. The lack of such studies was also noted in this part of the continent. This research is an initiative which is dedicated to the country and to researchers.

Water as a commodity is different to other commodities. It is a life sustaining product. Man has since ever used his ingenuity to harness water and to put it to good use for his benefits and survival. Water is unique in itself and without substitute. Consumers have no choice as regards water as they have while shopping for other products. People consume water because it fulfills the needs of man. There is no life without water.

Provision of adequate water supply of acceptable quality is an indication of the standard of living of people. Supply of water remains a priority in developing countries. The impact of water problems, particularly on the poor, is extraordinary. According to the UNDP, some 1.2 billion people still lack access to a safe and adequate supply of drinking water (UNDP, 2001:1-5). Nearly 3 billion people lack proper sanitation facilities. The resulting pattern of disease and shortage of water is one of the most important causes of premature mortality worldwide, as well as a major impediment to personal and national development.

At least 2 million children die every year because of unsafe water and inadequate sanitation. In less developed countries, 80 percent of infectious diseases are related to water. For women and children, collecting water is wearisome and time consuming and often results in children not being able to attend school. Villagers throughout the developing world must walk long distances to obtain water, while the poor in urban slums and shantytowns pay as much as ten times more for a cubic metre of water than do better off residents of certain developed countries.

Again according to the UNDP, water use has been growing at more than twice the rate of the population increase and already a number of regions in the world are chronically water short. About one-third of the world's population lives in countries that are experiencing moderate to high water stress partly resulting from increasing demands from growing population and human activities. By the year 2025, as much as two-thirds of the world population could be under water-stress conditions. In years ahead, the impact of water resources in the development of a number of countries could be still greater. Population forecast suggests that within 30 years, the world would have nearly 50 % more human inhabitants than it did in 1995. Most of this growth is expected to occur in arid around semi-arid areas, which would further exacerbate water availability problems.

Water is the main source of life and nourishment. When available in abundance, people often tend to use it as if it were limitless. The importance and lack of water is most felt in situations of scarcity when the water related needs of consumers are not fully satisfied. The developing countries are very often characterised by water scarcity.

The thesis is devoted to the domestic consumption of water and to the behaviour of domestic water consumers in Mauritius.

## **1.2 OBJECTIVE OF THE RESEARCH**

The objective of the research is to study consumer behaviour with respect to domestic water in Mauritius, to develop theories and to answer the question : 'What does the consumer behaviour model for domestic consumption of water in Mauritius look like?' In the process, the research further attempts at :-

- (i) Establishing whether cultural, geographical and/or occupational and any other variables bear any causal relationship with domestic water consumption in Mauritius.
- (ii) Defining the perception of consumers towards domestic water as a product of consumption in Mauritius.

In the case of Mauritius, it is important to distinguish between a water supply and water consumption. A water supply refers to the infrastructure while water consumption means usage of water. Thus, the consumption of water, that is tap water, depends on the existence of a water supply. This aspect is more fully explained in the next section 1.3.

## **1.3 FOCUS OF THE RESEARCH**

The research focuses on domestic water and the consumer behaviour of the people of Mauritius in relation thereto. It touches the whole population. At this stage, it is important to differentiate between a 'water supply' and 'water consumption' in the context of Mauritius. When a person applies for a water supply, he wants to see water flowing through the tap on his premises. This involves the connection and the laying of the water pipe through which water is made to flow from the water main to the consumer's premises and the installation of a water meter. The water main is underground and follows the alignment of the main roads. According to the provisions of the Central Water Authority (CWA) Regulations (Government Notice No. 122 of 1992 as amended), the stretch of

water pipe from the water main to the meter is defined as the communication pipe. The communication pipe, which is paid for by the consumer, remains the property of the supplier which is the CWA. A consumer is given a water supply from the water main and has water flowing from his taps on his premises only if he applies for the water supply and pays the deposit and installation costs as laid down in the law. It is only then that he is able to consume water from the water supply.

According to the CWA regulations, a consumer means a person to whom the CWA has agreed to supply water. Every person who is the owner or occupier of a property can apply to have a water supply to that property. Application for a water supply is made at the nearest CWA sub-office. The supply is connected in some four week's time provided that physical conditions, that is, existence of main water pipe and pressure are met, which is normally the case. The applicant is required to pay the deposit, installation and other costs, the minimum of which is presently Mauritian Rupees (MUR) 1,500.-

The CWA Regulations define a domestic consumer as a person to whom the CWA has agreed to supply water for domestic purposes, that is, for drinking, washing or cooking or for any other purpose of domestic life. Some 260,000 supplies are found in the domestic category for a population of 1.2 million inhabitants. The domestic category constitutes 94% of the water supplies in the country. The remaining 10,000 supplies are subdivided into thirteen non-domestic categories. These non-domestic categories could be the subject of a separate study.

#### **1.4 IMPORTANCE OF THE RESEARCH**

Literature searches show the utter lack of research on water consumption behaviour. Asakawa (2001:3) observes that "with a few exceptions, water consumption behaviour has not been a common topic of research in conventional analyses of water consumption or consumer behaviour."



Mauritius has certain particularities and paradoxes which triggers interest in the behaviour of the water consumers. Firstly, Mauritius being a plural society offers a convenient environment for the understanding of the behaviour of the different segments of the population both from an academic and from a management point of view. Secondly, while being a third world country, piped and treated water in Mauritius is available to almost hundred percent of the population. Those few living on high altitudes are provided with a tanker service.

The findings of the research are important for the management of the water sector in Mauritius in view of the variety of information they generate in relation to the water supply, the service and the consumer. In addition, the results of the study serve to build theories and lead to the development of a model of consumer behaviour. It thus constitutes a contribution to the identification and development of management and of management theories. Finally, the research is important in that it is an original contribution to the science of management and, thus, is a step in the furtherance of knowledge in the region and in the less developed countries. This research is but a beginning which will certainly generate interest in further research to bring more insight into the behaviour of water consumers.

In order to situate the study in its right context, it is important to have an overall knowledge of the water supply situation and of the people of Mauritius. The next two sections 1.5 and 1.6 are devoted to this purpose.

## **1.5 THE WATER RESOURCES OF MAURITIUS**

Mauritius enjoys a maritime climate, which is tropical in summer and subtropical in winter. It is a well-watered island. It receives on average around 2120 mm of rainfall per annum. This rainfall is skewedly distributed with about 4000 mm on the central uplands, 1500 mm on the eastern coastal Plains and 900

mm on the western coast, which is considered to be the driest part of the country (Ministry of Public Utilities, 1997:IX).

The Water Resources of the Island of Mauritius in a year of average rainfall are in table 1.1.

**Table 1.1 - Hydrological Water Balance**

DETAILS	Mm <sup>3</sup> /YEAR	%
Precipitation	3900	100
Surface runoff	2340	60
Evapo transpiration	1170	30
Recharge to Ground Water	390	10

**Source: Central Water Authority (2002 :4)**

The present annual water utilisation is about 982 Mm<sup>3</sup> per year, equivalent to about 23% of average annual rainfall over the country. About 837 Mm<sup>3</sup> are from surface water and about 145 Mm<sup>3</sup> from ground water. The water utilisation may be broadly classified as shown in table 1.2 that follows.

**Table 1.2 - Water Utilisation of Mauritius**

SN	PURPOSE	SURFACE WATER (Mm <sup>3</sup> )	GROUND WATER (Mm <sup>3</sup> )	TOTAL (Mm <sup>3</sup> )	%
1	Potable	86	123	209	21
2	Agricultural	446	22	468	48
3	Hydro Power	305	-	305	31
	Total	837	145	982	100

**Source: Central Water Authority (2002 :4)**

Both the water behaviour and the water supply in Mauritius can be classified as problematic. The Island depends on rain water and finds itself in the tropical region. The cyclonic weather lasts from December to April. Mauritius depends heavily on the rainfall of the cyclonic season for the refilling of its impounding reservoirs and aquifers. Whenever these rains fail, then drought sets in and with it the water supply problem. This is a paradoxical situation where cyclones are not welcome at all, but cyclonic rains are !

Another water supply problem is that only part of Mauritius enjoys a 24 hour water supply and that too during normal situations. The objective in developed countries is to ensure a 24 hour water supply. In Mauritius, 75% of the consumers are on a 24 hour supply, 10% on an 18 hour supply and 10% on a 12 hour supply and 5% on an 8 hour supply daily. Section 1.6 gives a picture of the institutions responsible for the management of the water sector in Mauritius through the years.

## **1.6 HISTORICAL AND INSTITUTIONAL BACKGROUND**

During the British rule (1810 – 1968), the management of water supply, except that of the city of Port Louis, rested with the Government Department known as the '*Public Works Development*'. This department was attached to the newly created '*Ministry of Works*' in 1957. After the Independence, the Ministry of Works continued to be responsible for water supply. The water supply for the city of Port Louis continued to be managed by the Municipality of Port Louis (Central Water Authority, 1998: 10,15).

Mauritius acceded to Independence in 1968. One of the most acute problems facing the Government at that time was shortage of water supply. Street demonstrations against poor and lack of water supply were a regular feature at that time. The water sector assets showed the existence of seven earth filled dams with a total capacity of 65 Mm<sup>3</sup> and a few kilometres of trunk

and distribution mains which had been laid as back as 1886 and 1926 (Central Water Authority, 1998:5). In most of the cases, the elements of the water supply systems were more than 50 years old and were, thus, past their most economic life. High leakage existed in the systems and the unaccounted for water, that is, water lost in the networks during transmission ranged from 60% to 70%. Both the production and distribution conditions had deteriorated so much that intermittent supplies were a permanent feature throughout the island where a piped water system existed. At the same time, economic development required an immediate investment in the industrial, commercial, hotel and tourist sectors. This depended largely on a good water supply system. It was obvious then that improvement in the water sector was urgently required.

In order to respond to the exigencies in the water sector facing the country, Government legislated in 1971 to detach the Water Development Branch of the Ministry of Works and the Port Louis Municipal Water System to recombine them under a parastatal body known as the Central Water Authority (CWA).

By virtue of Act No. 20 of 1971, the CWA became operational in 1973. The object of the CWA, as laid down in the law, is for the control, development and conservation of water resources. It is the sole undertaker of water for domestic, commercial and industrial purposes in Mauritius. Section 1.7, which follows, gives a brief of the development of the water supply systems in Mauritius.

## **1.7 THE WATER SUPPLY SYSTEMS**

The water supply systems in Mauritius have developed into three distinct systems namely, the Port Louis System, the Mare aux Vacoas System and the District Water Supply System (John Taylor and Sons, 1973:4).

### **1.7.1 The Port Louis System**

The City of Port Louis has a piped water system since more than 200 years. Canal Dayot was constructed in 1790 to convey untreated water from the Grand River North West (G.R.N.W.) to the western suburbs of Port Louis (John Taylor and Sons, 1973: 6-16). This canal was condemned in 1939 for having become a breeding place for mosquitoes. Canal Bathurst, which was constructed in 1823 to convey untreated water from the Calebasses River to the eastern suburbs of Port Louis, went into disuse in 1961. Port Louis was first supplied with treated water in 1926 with the installation of the filtration plant at Pailles.

The City of Port Louis Water Supply System was, according to the law, vested with the CWA on 14<sup>th</sup> February, 1973. Until then, the Port Louis Water Supply System rested with the Municipality of Port Louis. The main source has been the Grand River North West.

The Port Louis Water Supply System serves the City of Port Louis area and its suburbs. The Grand River North West water impounds into a dam across the river known as the Municipal Dyke. The water is diverted through feeder pipes to the Pailles Treatment Plant where it is treated through the process of slow sand filtration and chlorinated prior to supply to consumers. The supply is supplemented by water from Rivière Profonde source and by groundwater.

### **1.7.2 The Mare Aux Vacoas System (MAV)**

A piped water supply system was first inaugurated in Mauritius on 3 March, 1888. Its source was the Mare aux Vacoas. The Mare aux Vacoas was a small marsh whose capacity has been increased by damming the outlets. It is shown on the 18<sup>th</sup> Century maps of Mauritius and probably the first impoundment to increase its natural capacity took place in the late 19<sup>th</sup> Century. Since then the height of the dam has been raised several times. The last raising took place in

1960/61, when the storage capacity was increased to 27.61 Mm<sup>3</sup> (John Taylor and Sons, 1973: 17 - 18).

This system serves the urban areas of Plaines Wilhems, that is, the towns of Curepipe, Quatre Bornes, Vacoas, Phoenix, Rose Hill, Beau Bassin, a small part of Port Louis, certain localities on the west coasts, the area from Petite Rivière to La Marie and around Nouvelle France. The water from Mare aux Vacoas is filtered and chlorinated at the La Marie Treatment Plant before distribution. Supply is supplemented by water from ground water sources.

### **1.7.3 The District Water Supply System (DWS)**

This system serves the rest of the Island and is essentially a rural water supply system. It feeds by far the largest area, such as, the northern, southern and eastern parts of the Island, and small urban areas such as Mahebourg. The system has evolved from local sources. The largest source is Piton du Milieu reservoir which was constructed in 1953. It has a storage capacity of 3.17 Mm<sup>3</sup> (John Taylor and Sons, 1973:30). The treatment capacity was last increased in 1999. The District Water Supply System includes four treatment plants namely, Piton du Milieu, La Nicolière, Mont Blanc and Riviere du Poste which use a rapid sand filtration sedimentation process.

The water supply systems in Mauritius is summarised in table 1.3 (p.11).

**Table 1.3 - Water Supply Systems of Mauritius**

	<b>System</b>	<b>Port Louis System</b>	<b>Mare aux Vacoas System</b>	<b>District System</b>
1	Source	G.R.N.W., Rivière Profonde & Ground Water	Mare aux Vacoas Reservoir and Ground Water	Piton du Milieu, Rivière du Poste, Rivière des Galets, Rivière Patates, Bois Chéri, Mare aux Vacoas Reservoir and Ground Water
2	Treatment Plant	Pailles	La Marie	Piton du Milieu, Mont Blanc, La Nicolière, Rivière du Poste
3	Bore Holes	9	42	61
4	Service Reservoirs	15	31	56
5	Trunk Main (Approx.)	137 km	117 km	231 km
6	Service Main (Approx.)	108 km	210 km	632 km
7	Distribution Main (Approx.)	259 km	449 km	430 km
8	Production Mar 2005 (Mm <sup>3</sup> )	2,443	5,885	7,921
9	Subscribers March 2005	41,047	104,657	131,451
10	Population (Approx.)	194,000	450,000	499,000

**Adapted from: Central Water Authority (2001: 3-10)**

The following section 1.8 shows the offices from which the CWA provides its services.

## 1.8 CUSTOMER SERVICE CENTRES

Since before the creation of the CWA, regional offices of the Ministry of Works existed at districts level to look after water supply, roads and public buildings. The CWA adopted the policy of decentralising its services in order to be nearer to its customers. The Customer Service Centres in different parts of the Island, apart from the site offices, where the customer is provided all the services needed from the organisation are shown in table 1.4.

**Table 1.4 - CWA Offices**

<i>Location</i>	<i>District</i>	<i>Area</i>
Port Louis	Port Louis	Capital City
Pamplemousses	Pamplemousses & Rivière du Rempart	North
Central Flacq	Flacq	East
Rose Belle, Mahebourg	Grand Port	South
Souillac	Savanne	South
St. Paul	Upper Plaine Wilhems	Centre
Rose Hill	Lower Plaine Wilhems & Black River	Centre & West

**Source : Central Water Authority (1999:76)**

The domestic water tariff and the billing system are explained in the next section.



## 1.9 WATER TARIFFS AND BILLING

The present water tariffs as published in Government Notices Nos. 96, 97 and 98 are at Appendix I. The different categories of consumers have different tariffs applied to them. These categories are :-

- Domestic consumers;
- Non-Domestic Consumers which include supplies for industrial, agricultural, commercial, hotels and Government purposes;
- Ground water users for industrial and for agricultural purposes.

The tariffs increase progressively, that is, higher rates are applied to higher consumption bands. This policy also aims at discouraging wastage. The Domestic Water Tariff which is of interest to this thesis is reproduced in table 1.5.

**Table 1.5 - Domestic Tariff**

<b>Consumption Band m<sup>3</sup></b>	<b>Water Charges(MUR) Per m<sup>3</sup> per month</b>
0 - 10	4.50 (min. MUR 45.- p.m.)
11 - 15	5.50
16 - 20	7.50
21 - 30	9.50
31 - 50	13.50
51 - 100	18.00
101 - 250	24.00
Above 250	30.00

**Source : Government Notice No. 98 of 2002**

The lowest or base consumption band applies to all domestic consumers alike. In so doing, it also caters for the lowest income group. In that band, the consumer pays MUR 0.0045 for one litre of filtered, treated and chlorinated water

of WHO standard, compared to MUR 10.00 for one litre of bottled water in a shop and MUR 40.00 in an hotel. The domestic consumer is required to pay a meter rent of MUR 10.00 per month in addition to the water charges.

According to the CWA Regulations, all supplies have to be metered. The meters are read once every month. For billing purposes, a month according to the law, is a period between twenty-five and thirty-five days and may start on any date of the calendar month. The water bills are based on the volume of water consumed and the bills are delivered one month in arrear, that is, bills for the month are delivered during the next monthly reading of the meter. Water meters are read and bills delivered by Meter Readers. The billing system is fully computerised. Data input, for example, readings of meters, is done at the consumer service centres, while processing and printing of bills are done at the CWA Head Office.

## 1.10 PRODUCTION

The potable water production by the CWA for the month of March, 2005 is shown below :-

**Table 1.6 - Potable Water Production - March 2005**

<b>System</b>	<b>Surface Water (Mm<sup>3</sup>)</b>	<b>Borehole (Mm<sup>3</sup>)</b>	<b>Total (Mm<sup>3</sup>)</b>
Mare aux Vacoas (Upper)	2.913	0.550	3.463
Mare aux Vacoas (Lower)	0.000	2.422	2.422
Port Louis	1.366	1.077	2.443
DWS – North	1.584	1.974	3.558
DWS – South	0.776	1.366	2.142
DWS – East	0.737	1.484	2.221
<b>T O T A L</b>	<b>7.376</b>	<b>8.873</b>	<b>16.249</b>
Percentage	<b>45%</b>	<b>55%</b>	<b>100%</b>

**Source: Central Water Authority (2005)**

**Note: Volume produced does not include private boreholes**

Information received from the CWA indicated that about 46% of the production is lost through leakages in the water networks and through other factors before reaching the consumer (Severn Trent, 2005:2).

Next section 1.11 contains information on consumption of water in Mauritius.

### 1.11 CONSUMPTION

Table 1.7 below shows the number of consumers in each category, volume consumed and the sales amount. The domestic Supplies constitute about 80% of the potable water consumption:

**Table 1.7 - Water Sales - March 2005**

<b>Tariff No.</b>	<b>Category</b>	<b>No. of Consumers</b>	<b>Volume Sold (m<sup>3</sup>)</b>	<b>Total Amount Collectible (Rs)</b>	<b>Average Rs. Per m<sup>3</sup></b>
11	Domestic	260,139	6,005,295	45,618,607.00	7.16
51,52	Government	3,636	372,646	6,287,276.00	16.75
12, 13, 23	Acquired/Concessionary Prises	46	1,446	8,960.00	6.20
21	Commercial	9,694	469,752	7,887,912.00	16.56
22	Hotels, Guest Houses	198	337,519	9,874,439.00	29.23
31	Industrial	747	377,709	5,682,504.00	15.00
61	Ship	1	4,110	115,080.00	28.00
41	Vegetable & Livestock Producers	2,439	98,411	798,288.00	7.85
<b>TOTAL POTABLE WATER</b>		<b>276,900</b>	<b>7,666,888</b>	<b>76,273,066.00</b>	<b>9.58</b>
B.H. Agricul-ture	Borehole Agriculture	111	360,973	180,505.00	0.50
B.H. IND.	Borehole Industrial	125	396,169	2,178,954.00	5.50
S. Water	Surface Water	19	175,070	346,958.00	1.98
<b>TOTAL NON TREATED WATER</b>		<b>255</b>	<b>932,212</b>	<b>2,706,417.00</b>	
<b>GRAND TOTAL</b>		<b>277,155</b>	<b>8,599,100</b>	<b>78,979,483.00</b>	

**Source : Central Water Authority (2005)**

**Note:** Average amount per m<sup>3</sup> excludes meter rent.

This thesis studies the behaviour of the Mauritian domestic water consumers. Knowledge of the people of Mauritius and their origin is helpful to understand their behaviour. The rest of this chapter is thus devoted to the people of Mauritius.

## **1.12 MAURITIUS AND ITS PEOPLE**

This section gives a glimpse of Mauritius and its people. Each country has its own specificities, as does each ethnic group. Thus, to understand the habit of people, it is relevant to have some knowledge about the people themselves. This aspect is important in the case of Mauritius in that it is a multi-racial and a pluricultural country. Another particularity about Mauritius is that the different ethnic groups cannot be distinguished by different geographical areas, as is at times the case in big countries like Africa. This section allows to understand the Mauritian consumer and his environment and will certainly assist in differentiating his consumer behaviour and understanding the findings of this thesis.

Mauritius is one of the three islands collectively called the Mascarene Islands, the other two being Reunion Island and Rodrigues Island, located in the South Western part of the Indian Ocean. It is situated between latitudes 19°50 and 20°30'S and longitudes 57°18'E and 57°46'E. It is of volcanic origin and 1865 square kilometres in area. Mauritius enjoys a maritime climate, which is tropical in summer and subtropical in winter (Ministry of Public Utilities, 1997:IX). The present population consists of 1.2 million inhabitants (Central Statistical Office 2001: 4).

Mauritius had no aborigines. People from different parts of the world came to settle here at different periods. Along with them, they brought their cultures which still exist today. Some have praised the co-existence of the different cultures. Some have seen in the different cultures a very luxuriant field towards political ends. Business is an interplay among the businessman, the

consumer and power. One thing certain is that the Mauritian society is divided horizontally into economic and social classes and vertically by racial, religious and cultural differences. Dissecting and analysing the complex and very flimsy fabrics of the Mauritian society with a view to examining its consumer behaviour is a very sensitive issue.

For the purpose of this study, the population is divided into four ethnic groups, namely, Hindus, Muslims, Sino-Mauritians and the General Population. The Hindus and the Muslims came from India; while the Sino-Mauritians are the descendants of Chinese immigrants. The rest of the population, namely the Afro-Mauritians and the very few descendants of the French and of the other Europeans are grouped in the General Population. In the present context, ethnic groups also refer to religious and cultural groups. The religious and cultural affinities of each ethnic group can hardly be dissociated.

### **1.13 DISCOVERY AND SETTLEMENT**

This section gives a brief of the discovery of the Island and settlement thereon by colonists from different countries at different times of history.

#### **1.13.1 Early Visitors**

Very little is known about the early occupants of the Island. It is possible that nearly one thousand years before Christ, Phoenicians sailing in the South Indian Ocean might have visited Mauritius. Wax tablets found by the Dutch on the island in 1598 are believed to have been left by the Phoenicians. In the 5<sup>th</sup> and 6<sup>th</sup> centuries A.D. the Polynesians might have visited the Island on their way to settle in Madagascar. It is likely that the Island was visited before the 16<sup>th</sup> Century by Arab sailors, Malay migrants and sea farers on their way to Madagascar. The Portuguese visited the Island in 1507 and named it 'Cerne

Island'. They made no effort to build a permanent settlement on the Island (Varma, 1980 :4).

### **1.13.2 Dutch First Settlement**

The Dutch first settled on the Island in 1598 with a colony of 300 people. They introduced sugar cane plantation from Java, and animals like deer, goat, sheep, pig and dog. They brought slaves from Africa and Madagascar for farming. In 1658 the Dutch left the Island, destroying anything that could be valuable to their future rivals. They left behind their slaves on the Island (Varma, 1980 :7).

### **1.13.3 Dutch Second Settlement**

The Dutch made a second attempt to settle on the Island in 1664. They tried to develop agriculture and farming, and to build roads; but finally preferred to live on the supplies of meat from the herds of deer and wild cattle readily available on the Island rather than growing crops and developing the Island resources. The Dutch finally abandoned the Island in 1710 after destroying all their buildings and stores. They again left behind their slaves (Varma, 1980 :10).

## **1.14 FRENCH SETTLEMENT - 1715 - 1810**

The French became interested in the Island because they were already occupying the neighbouring Island of Bourbon (Reunion) and were in great need of a harbour for their spice trade which was then the monopoly of England and Holland. The French first settled on the Island in 1715 and named it Isle de France. They brought slaves from India, Madagascar, East and West Africa to work on the island and they developed settlement. They cleared forests, developed agriculture and introduced crops like cotton, maize, rice, manioc, tea, indigo, spices and turned the island into an important agricultural economy. They

developed the harbour, built roads, hospitals and important buildings. The population during the French settlement which consisted of 200 freemen and 650 slaves in 1735 was 13500 and 55000 respectively in 1809 (Filliot, 1989: 84).

### **1.15 THE BRITISH SETTLEMENT**

The British sailors were often attacked by the French pirates from the Isle de France. They therefore captured it from the French in 1810. The French were allowed to occupy their land. They were also allowed their way of life, language, laws, religion and customs (Varma, 1980 :10).

The British encouraged agriculture and built factories. They abolished slavery in 1834 and brought workers from India, Africa and Madagascar to work in the fields. They encouraged merchants to trade more and more with other countries. They made the sugar cane the main cash crop of the Island. The British developed the Island in all fields, be it infrastructures, education, health, finance, economy, communication or social services.

### **1.16 WATER SUPPLY AND WATER CONSUMPTION DURING THE EARLY DAYS**

History does not record the water supply or water consumption behaviour during the early days of settlement in Mauritius. However, a look at land settlement and physical evidence allows to draw certain conclusions. In the early days settlement took place near sources of water, that is near rivers. Water from these rivers was used for human and for animal consumption and for agriculture. With the development of the sugar industry, the sugar estate owners brought water through canals from rivers for the operations of their sugar mills. Such canals both in use and abandoned can still be seen. Some sugar estates developed wells which still exist. Water from these sources was also used by the inhabitants on the sugar camps of the sugar estates. Incidentally, it is worth

noting that rivers and wells have been the sources of water supply in both Africa and India from where the bulk of the Mauritian population originated, showing in other words that these sources were not strange to the people of Mauritius in the early days.

### **1.17 CONSUMER BEHAVIOUR IN DEVELOPED AND LESS DEVELOPED COUNTRIES**

Mauritius is situated in the African continent and finds itself among the developing countries. This Section gives an idea of consumer behaviour in developed and in less developed countries. This helps to understand the consumer behaviour with respect to domestic water in Mauritius that emerges as a result of this research.

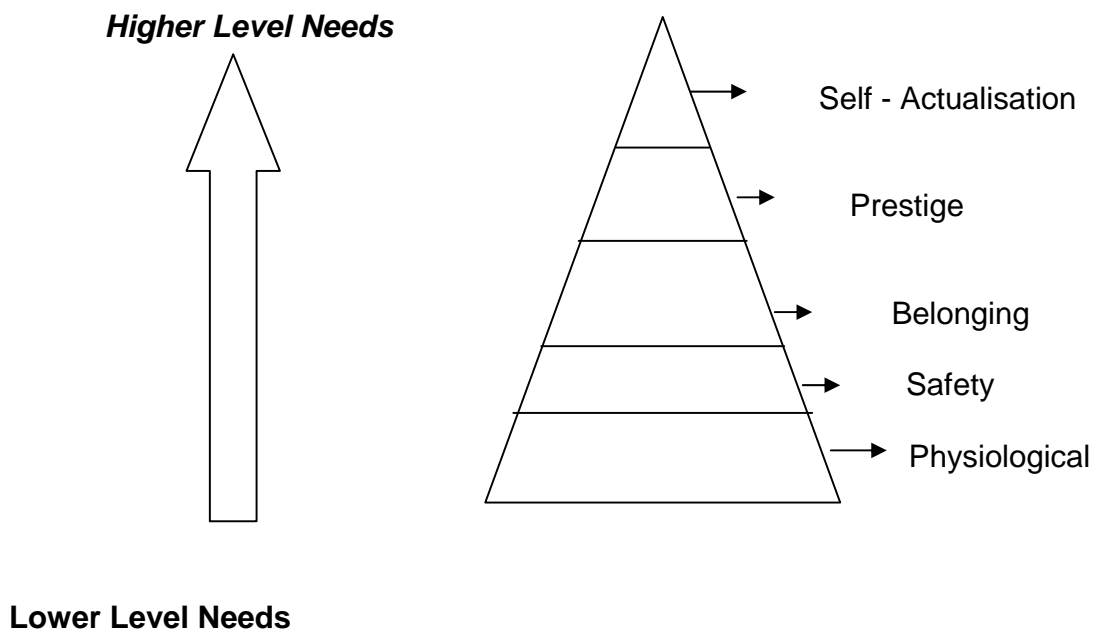
According to Hardwick, Khan & Langmead (1977: 44), a developed country is one in which real national income per capita is relatively high and which enjoys a relatively high standard of living. A less developed country, on the other hand, has a low real national income per capita, a large agricultural sector, high population growth, a low capital labour ratio and poor infrastructure. The major distinguishing features, which demarcate less developed countries from developed ones, are poverty and low national income per head. The very nature of the less developed countries and developed countries means different standards of living of the people in those two categories of countries which signify to a large extent differences in consumer behaviour of the people there.

In trying to reply whether differences in consumer behaviour exist in less developed and in less developed countries, it is important to understand the motivating forces which drive consumption decision. One has to know what needs consumers are seeking to fulfill and why they choose to fulfill them in the way they do. In this context, Maslow's (1954) theory of needs and motivation helps to reply to the question. Maslow proposed his five-tiered hierarchy of needs to understand motivation. These are physiological, safety, belonging,



prestige and self-actualisation. Each level of the hierarchy specifies a certain type of need. The existence of an unfulfilled need creates tension within the individual, which motivates him to fulfill that need in order to reduce that tension and return to a balanced state of homeostasis. This hierarchy originally proposed for understanding personal growth and the attainment of personal experiences serves as a universal approach for understanding motivation and is also appropriate for explaining the needs and motivation of consumers. The following figure 1.1 summarises Maslow's hierarchy of needs :-

**Fig. 1.1 - Maslow's Hierarchy of Needs**



**Source: Maslow (1954)**

The five levels of prepotent human needs which Maslow's (1954) theory proposes rank in order of importance from lower level biogenic needs to higher level psychogenic needs. The individual's lower level needs have to be satisfied before higher level needs emerge. The lowest level need that an individual

experiences as yet unsatisfied serves to motivate the individual's behaviour. Once that need is fulfilled, a new and higher need emerges that an individual is motivated to fulfill. Again, on satisfaction of that need, a still higher need emerges, which again motivates the consumer to fulfill it. The developed countries have a relatively high real national income per capita and a better standard of living compared to those in less developed countries. Thus consumers in developed countries generally automatically find themselves nearer to the upper level of needs, that is, self actualisation, while those in less developed countries characterised by poverty and unemployment generally find themselves nearer to the lower level of needs, that is physiological needs. This, in one way, explains the very basis for the difference in consumer behaviour in developed countries and in less developed countries.

Maslow's theory of needs (1954) is 'perhaps the most all-embracing and influential theory in common currency. In a way, this is both its strength and its weakness'. Critics do agree that the theory gives 'an interesting notion that 'behavioural efficiency' can be obtained by actions that satisfy more than one need at the same time' (Rice, 1995:154). However, critics have also highlighted the weaknesses of this theory. According to them, the theory is weak at prediction. It lacks empirical evidence to support it. For example, physiological and safety needs are not necessarily the deciding factor as in the case of heroism. The absence of money from the list of needs is of concern to some people. Self-actualisation and esteem are likely to be related to each individual's perception and may be socially conditioned (Rice, 1995:154). Moreover, every human being may not experience the various needs in the same manner. Also, it may be possible that a need is not completely fulfilled before another need becomes more pressing.

It is an obvious fact that the level of education, standard of living and consumption are higher in developed countries than in less developed ones. Developed countries are characterised by affluence while poverty and

unemployment are permanent features in less developed countries. In developed countries, consumers are concerned about how well they live, while in less developed countries, consumers struggle for survival. Consumer behaviour in these two categories of countries differ in more than one way as shown above. Mauritius is among the less developed countries. Hence, the standard of living of Mauritians can be considered to be lower than that in developed countries. The consumer behaviour of Mauritians can therefore, to a large extent, be considered to be nearer to that obtainable in less developed countries. As far as water is concerned, it is a fact that it is available to hundred per cent of the Mauritian population. The behaviour of domestic water consumers in Mauritius can be again viewed at least to be nearer to the consumers in less developed countries. This view emanates from the fact that the Mauritian society cannot be considered to be an affluent one.

## **1.18 THE PEOPLE OF MAURITIUS AND THEIR ORIGIN**

This section gives the historical background of the different segments of the Mauritian population. It allows to understand the circumstances in which the local population developed into a pluri-cultural society.

### **1.18.1 The Origin**

The study of consumer behaviour in Mauritius necessarily requires an understanding of its people. This is more so if one is to realise that the forefathers of the population came from different parts of the world, namely, from United Kingdom, France, Africa, India and China bringing with them their cultures, customs, habits and languages which still exist.

It is important to note in the case of Mauritius that all people belonging to an ethnic group do not follow the same religion; while at the same time each ethnic group has continued to preserve its culture and tradition. Thus, in this thesis, 'ethnic group' is often used where this does not refer specifically to

'religion'. From data available from the Population Census of 2000 (Central Statistical Office, 2001), the whites of European origin, the Kreoles of African and of Malagasy origins are grouped as General Population; those of Chinese origin are grouped as Sino-Mauritians, and those of Indian origin are divided into Hindus and Muslims. The population of Mauritius has been grouped as shown in table 1.8.

**Table 1.8 - Population of Mauritius 2000**

<i><b>Ethnic Group</b></i>	<i><b>Number</b></i>
Hindu	584,983
Muslim	195,939
Sino-Mauritian	26,104
General Population	236,043
<b>T O T A L</b>	<b>1,143,069</b>

**Source: Central Statistical Office (2001:71)**

### **1.18.2 Mauritians of French Origin**

For the purpose of this exercise, the Mauritian of French origin, is termed as Franco-Mauritian and is classified in the 'General Population' group. The Franco-Mauritian is the descendant of the French who settled on the Island during the French occupation. In order to develop agriculture on the Island, the French administration ceded land to the French settlers by way of concessions. Each concession consisted of 156 arpents (Teelock, 1995 :14). Thus, the Franco-Mauritians, through heritage, own the major part of the land under cultivation. The Franco-Mauritians proper are very few in number. Their economic activities have gone on developing through the years. They are very active in the economic fields.

### **1.18.3 Mauritians of African Origin**

The Afro-Mauritian, as the term signifies, is the Mauritian individual of African origin, generally known as Kreole. The Afro-Mauritian is the descendant of slaves who were brought to Mauritius. The Mauritian of African Origin is not keen in doing agricultural labour, is generally not perceived as possessing land and is carefree of tomorrow. The Afro-Mauritian has a predilection for music, dance, festivity and likes splendour and amusement. These characteristics of the slaves' descendants have come down through generations ( Benoit ,1985:31).

The Afro-Mauritians are generally concentrated in the coastal villages and in urban suburbs where they live mostly in Housing Estates. These are low cost houses built by Government and rented or sold at very nominal prices. Like any other Mauritian, the Afro-Mauritians, with the willingness to, have progressed in any walk of life.

### **1.18.4 Mauritians of Indian Origin**

Muritians of Indian origin constitute the largest proportion of the population. Indian existence in Mauritius goes back to the French days. Indians with skills and trades were encouraged to come to the Island. They were mostly from South India. During the second half of the seventeenth century, Indians were to be found among slaves working in agriculture or as servants. By 1800, there were already 6000 Indian slaves on the Island (Varma, 1973:15).

During the early days of the British rule, Indian convicts were brought to the Island for labour. However, the real influx of Indians to Mauritius started with the abolition of slavery in 1835, when the slaves of African origin on being freed abandoned the sugar cane plantations. Indentured labourers were recruited for Mauritian planters by the Chamber of Commerce in Bombay, Madras and Calcutta. In order to attenuate the imbalance between male and female workers,

the planters were encouraged to bring more and more women. There is a tendency to associate Indians solely with agriculture. It is a fact that the success of sugar cane as a cash crop in Mauritius is due to them. They were engaged in other sectors as well. Out of 311,636 males and 96,444 females who arrived between 1837 and 1923, 134,704 and 33,816 respectively returned to India after completing their contracts of employment (Varma, 1973 : 24-39). The Mauritian population of Indian origin is divided between Hindus and Muslims, the former being greater in number than the latter. The religions and cultures brought by Indians are deep-rooted in the Mauritian society. Mauritians of Indian origin are busy in all walks of life. Each one has followed his own aptitude and wishes. They are active in all sectors in the country.

#### **1.18.5 Mauritians of Chinese Origin**

The Mauritian population includes a small number of about 2.3 per cent of the population whose forefathers came from China. For the sake of this study, they are classified as Sino-Mauritians. Chinese were introduced in the Island by the Dutch. In 1638, the Dutch brought some indigenous natives from Java, a few exiled Chinese and later on slaves from Madagascar for labour (Bissoondoyal, 1989 :10). The French colonists in the Mascarene Islands depended mainly on slave labour from Africa, Madagascar and from certain parts of South-East Asia. Thus the population included Malays and Chinese as well.

Among the first Chinese immigrants were sailors and marine carpenters who worked as artisans. They landed from the ships on which they worked and remained here (Ly Tio Fane Pineo, 1978 : 62). These Chinese are considered as voluntary immigrants.

The economic expansion as a result of development in the sugar cane culture attracted the Chinese to emigrate voluntarily to this Island. Massive Chinese immigration started as from 1860. Emigration from China further

resulted from its economic crisis, feuds and revolutions, invasions and fall of the ancient regime in 1910 (Ly Tio Fane Pineo, 1978 :262 - 273).

The Chinese interest in commerce is seen since their very early years in the country. They did business in close co-operation with each other. If there was competition it was not among the Chinese merchants themselves, but against merchants of other communities. The early Chinese immigrants succeeded in their commercial activities. Until the end of the 19<sup>th</sup> Century, the majority of the Chinese community was engaged in commercial activities. In 1901, out of 3515 Chinese, 2858, that is, 81.3%, were merchants. In 1921, the percentage was 56. In 1944 it was 33.2. Today it is about 20%. The number of shops could not go on increasing for a limited population (Ly Tio Fane Pineo, 1978:77).

Years that followed saw other communities interested in commerce and the Sino-Mauritian interested in other sectors as well. The Sino-Mauritians have preserved their culture. As any other community, they form part of the population and share certain common values and norms. However, as a distinct community, they also have a style of life and a consumer behaviour which demarcate them from other communities. They form part of the Mauritian population and folklore of the local society.

Section 1.18 contains a brief historical background of Mauritius and of its people. This aspect serves to understand the different ethnic components of the Mauritian society. Mauritius is a multi-racial and pluri-cultural country which makes it a very convenient place for the study of consumer behaviour. At the same time, any study of consumer behaviour in the local context cannot disregard the ethnic groups of the country. The present thesis is devoted to the study of domestic water consumers in Mauriitius and for this purpose, the different ethnic groups stand as one of the main variables.

## **1.19 PLAN OF THE STUDY**

Chapter one gives the background to the research and sets down its objective.

The literature review is divided into two parts, namely, into Chapters two and three. Chapter two lays down the theoretical foundation of the thesis. Chapter three is devoted to models of consumer behaviour and to the construction of an integrated model of consumer behaviour.

Chapter four describes the research methodology. It includes the research design, the sampling procedures, the data collection method, the field survey and the data analysis procedures. This chapter also contains the hypotheses and the survey questionnaire.

Chapter five contains the research findings. These findings emanate from the personal interview which has been carried out in the field and from the interview of the focus groups.

Chapter six is devoted to the development of the consumer behaviour model with respect to domestic water in Mauritius.

Chapter seven winds up the thesis with recommendations and conclusion.

## **1.20 CONCLUSION**

This chapter has given the background to the research. It has introduced the subject of study and set down the objective of the research. It gives a brief of the water supply situation in Mauritius and of the country and its people. This helps to understand the behaviour of consumers in a pluri-cultural setting which



is that of Mauritius. Finally, this chapter gives a foresight of the other chapters that follow.

Chapter two, which follows, contains the first part of the literature review which deals with the theoretical foundation of the research.

# **CHAPTER 2**

## **LITERATURE REVIEW I**

### **FOUNDATIONS OF CONSUMER BEHAVIOUR**

#### **2.1 INTRODUCTION**

The literature review is contained in this chapter and in the following chapter 3. The objective of these two chapters is to conduct a review of literature in the field of consumer behaviour which would enable the thesis to progress in line with its objectives set in the previous chapter. Chapter 2 deals with the foundations of consumer behaviour. It covers both the historical and theoretical aspects of consumer behaviour. Chapter 3 is devoted to the models of consumer behaviour. It culminates in the construction of an integrated model of consumer behaviour based on the common elements of the models that have been reviewed. This integrated model serves as a framework for the analysis of the model of consumer behaviour with respect to domestic water in Mauritius and which is constructed in chapter 6.

This chapter opens with a brief history of consumer behaviour and its evolution as a discipline. This historical background is followed by a definition of consumer behaviour, its reliance on the other social sciences, its affinity as part of human behaviour, its relevance as a subject of study and ultimately its importance to marketing.

The theoretical part aims at explaining consumer behaviour. It covers the individual, social, cultural and psychological determinants of consumer behaviour and some of the relevant research findings. The individual determinants pick up from some of the well-known personality theories and involve characteristics like personality and self-concept. The social factors influencing consumer behaviour presented in this review emanate from the environment. These are the

social influences, culture, sub-culture, social class, reference group and family. The psychological factors include motivation, perception, learning, beliefs and attitudes. The review further explains the tricomponent attitude model and refers to researches on human attitudes with respect to consumer behaviour.

The next phase of this chapter presents the consumer decision-making processes. This is followed by the review of some research findings in the field of consumer behaviour. The chapter finally deals with consumer ethics and the purchase of illicit goods by the consumer.

## **2.2 THE EVOLUTION OF CONSUMER BEHAVIOUR AS A DISCIPLINE**

According to Du Plessis (1991:4), 'a survey of the origin and the development of consumer behaviour' can safely 'divide consumer behaviour research' into 'four periods, namely, the early years before 1950, the exploratory period (the 1950s), the growth period (the 1960s) and the maturing period during and after the 1970s'. In fact, the paragraphs that follow on the evolution of consumer behaviour as a discipline are adapted to some extent from Du Plessis (1991).

## **2.3 THE EARLY YEARS**

Du Plessis (1991:4) gives in a very comprehensive form the rarely found record of the evolution of consumer behaviour since its early years. He notes that according to history, the desire of businessmen 'to know their customers can be traced back to the Venetian traders', who undertook surveys on consumer preferences around the Mediterranean Sea. Later on, economics developed as a subject which served as basis for consumer behaviour. Economists viewed consumers 'as rational beings who individually or collectively determined the demand for goods'. 'Other economic characteristics of consumer decisions were through reasoning' and risk avoidance. 'Already in 1854, Gossen formulated the marginal utility theory, according to which, consumers would choose a

combination of products such that the marginal utility of various kinds of needs would be equated and the value of the last need of each kind would be the same'. In 1871, Menger expanded Gossen's theory and formulated 'that the consumer would choose a combination of products which would afford him the greatest total usefulness within the limits of his buying power'. 'In 1857, Engel formulated a theory which explained consumer behaviour in terms of rising family income'. According to this theory, the percentage of income spent on food was inclined to decrease, that on housing and household activities tended to be constant, while that on other categories like recreational activities tended to increase.

Du Plessis (1991:5) further explains that besides economics, consumer behaviour has also evolved on the behavioural sciences such as psychology, sociology, anthropology and social psychology. In 1923, Copeland's theory of characteristics of goods made it clear that the buying habits of consumers vary with regard to different products. After the great depression of the 1930s, a greater interest in the consumer behaviour research was noted. The psycho-analytical theory of Edmund Freud is considered as an important contribution to the field of consumer behaviour. According to the Freudian theory, consumers are not aware of their actual buying motives as these are formed in their childhood and often suppressed by the self conscious mind.

At the end of World War II, marketers were able to sell almost all their products because of the scarcity resulting from the war (Assael, 1987:3). However, this situation changed after some time when consumers became more selective in their choice of products. The post World War II period saw several technological improvements and the introduction of various new products. The relatively low success of those products led marketers to find ways and means to reduce risks and to increase the acceptability of potential new products. This was done by researching consumer needs before introducing new products and by monitoring consumer acceptance of these products. The result was that firms shifted from being production oriented to being sales oriented. The most important

marketing activity was personal selling and advertising. Du Plessis (1991:8) reports the view of Peterson (1977) who classified the 1930s and 1940s as being the formative years of consumer behaviour research.

## **2.4 THE EXPLORATORY PERIOD (1950s)**

Du Plessis (1991:6) explains that consumer behaviour emerged as a discipline in the 1950s. Consumer behaviour research shifted from a macro-economic orientation to one centered around the behaviour of the consumer. The trend was to better understand consumer behaviour and to determine factors which induced certain forms of buying behaviour. The motivation theories stand as dominant research contributions for explaining consumer behaviour. In this context Du Plessis quotes Maslow (1954) who developed his motivation hierarchies of physical, emotional and social needs to explain consumer behaviour patterns when purchasing products to fulfill these needs.

Du Plessis refers to Dichter who attempted at explaining consumer behaviour based on psycho-analytical theories like that of Freud and to Katona who endeavoured to integrate economic theories with the behavioural sciences in his consumer behaviour theory. According to Katona, consumer motives and objectives change and adapt to various circumstances, and the awareness of problems and their solutions under exceptional circumstances are a result of rational behaviour. Du Plessis records the contribution of Smith (1956) which rests with his product-differentiation and market-orientation theories for the development of marketing strategies. He also refers to Smith who viewed the market as homogeneous with homogeneous segments having own needs, preferences and motives for buying. This period saw a change in the attitude of marketers towards consumer. During this period, organisations changed from a sales oriented to a market oriented approach (Assael, 1987:4, Du Plessis, 1991:5)

## **2.5 THE GROWTH PERIOD (1960s)**

Du Plessis (1991:8) noted that during the 1960s, consumer behaviour developed as a field of study for researchers and marketers. Theories from other disciplines were borrowed and developed for application in consumer behaviour. He quotes, among others, Engel, Blackwell and Kollat, Cox's persuasion theory, King's psychological theory on fashion, Robertson and the diffusion of innovation, Engel's theory on cognitive dissonance and Baker's theory on perceived risk as examples in this respect.

Du Plessis (1991:8) refers to Britt (1966) who made a noteworthy contribution during this period. Britt's contribution on perception stressed that consumers had a selective perception of products and that it was often difficult to reach them with information on the nature of a product and the degree to which it would fulfill their needs.

Du Plessis (1991:8) quotes Fishbein (1963), Ray (1981) and Van der Walt (1984) among other scholars who made considerable contributions during this era. Fishbein (1963) developed a behaviour-intention model which explained the attitudes of consumers towards products. Various learning theories and their application to consumer behaviour were discussed by Ray. According to Van der Walt (1984), these learning theories led to the conclusion that consumers must learn which products would satisfy their needs.

The first consumer behaviour model as noted by Du Plessis (1991:8) was developed by Howard (1963). This model comprises a systematic utilisation of learning theories and draws a workable distinction between actual problem solving behaviour, limited problem solving and routinised response behaviour.

Du Plessis (1991:8) makes reference to Peterson (1977) and notes that the 1960s saw the increasing use of statistical techniques in the study of consumer

behaviour and that at the same time, psychological techniques were introduced. Theories of the last decade were extended. As reported by Du Plessis (1991:7), Rogers's model stands as a major contribution. According to Rogers, 'the acceptance process of a new product is in terms of consumer awareness, consumer conviction of its value and consumer willingness to buy it and to test it'. Decisions to accept or reject the product are based on the reconfirmation of the test.

Du Plessis (1991:8) notes that the 1960s may be seen as a period during which consumer behaviour asserted itself as a discipline in its own right.

## **2.6 THE MATURE PERIOD (1970 ONWARDS)**

Du Plessis (1991:9) quotes Robertson, Zielwiski and Ward (1984) in the assertion that the 1970s saw more and more development of concepts related to consumer processes and application of same to consumer behaviour and less and less dependence on concepts from other disciplines. Emphasis was laid on how consumers collect, process and apply information in the decision-making process. Also models of consumer behaviour started to appear. Du Plessis quotes the Howard model (1963) and the Engel and Blackwell model (1968) as examples. He further explains that the original Howard and Sheth model was improved by Howard in 1977 to include problem solving and routine buying behaviour.

In parallel, methodology and measurement in consumer behaviour research were developed (Du Plessis, 1991:10). These took into consideration the physical, social and task environment of the consumer in the decision-making process. Du Plessis (1991:10) refers, among others, to the contribution of Van Raaij (1981) who in his model expressed consumer behaviour in cyclical and dynamic terms, namely, personal characteristics, perceived economic environment, general environment and economic characteristics.

Consumer behaviour which emanated and originally borrowed from the other social sciences, has developed into a fully-fledged field of research and stands as an important field of study on its own. The objective of the research remains the development of theories, concepts and models which 'explain and predict consumer behaviour'(Du Plessis, 1991:11). In the same context, the present thesis is devoted to the study of the behaviour of consumers of domestic water in Mauritius. In the process, it aims at developing theories and a model. The next section defines consumer behaviour.

## **2.7 THE DEFINITION OF CONSUMER BEHAVIOUR**

Different authors have defined consumer behaviour in different words; all pointing in the same direction and having the consumer as the central point. There is no universally accepted definition of consumer behaviour. Du Plessis (1991:11) quotes Mellot (1983) in support of this assertion. The following definition gives a comprehensive view of consumer behaviour which focuses beyond the mere antecedents and consequences of the purchasing behaviour:-

"Consumer behaviour comprises the behaviour patterns of decision units (individuals as well as families) which precede, determine and follow on the decision process for the acquisition of need-satisfying products, ideas and services." (Du Plessis, 1986:39)

In similar terms, for Schiffman and Kanuk (1996:7) :-

"Consumer behaviour refers to the behaviour that consumers display in searching for, purchasing, using, evaluating, and disposing of products and services that they expect will satisfy their needs."

Hawkins, Best and Coney (2001:7) define consumer behaviour as follows:-

" The field of consumer behaviour is the study of groups or organisations and the processes they use to select, secure,



use, and dispose of products, services, experiences or ideas to satisfy needs and the impacts that these processes have on the customer and society."

This view is reproduced by Cant, Brink and Brijball (2002:2). Cant *et al* (2002:2) also quote Sheth, Mittal and Newmann (1999) who define consumer behaviour as:-

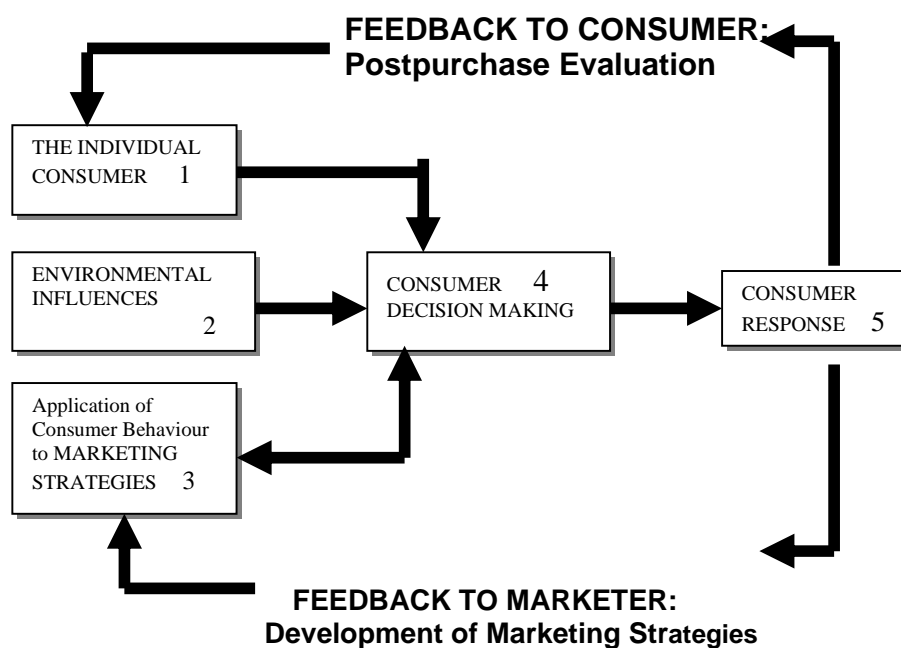
" The mental and physical activities undertaken by household and business customers that result in decisions and actions to pay for purchase and use products and services."

The conclusion that can be drawn from these definitions is that they contain certain common elements. These elements concern how people make decisions to spend their resources, that is time, money and effort on items of consumption to satisfy their needs. It involves what they buy, why they buy, when they buy, how they buy, how often they buy and use them and how they dispose of these items after consumption. (Schiffman & Kanuk, 1996:7). Consumer behaviour includes both physical and mental activities. Physical activities are those undertaken by customers such as visiting stores, comparing information, discussing with sales people and purchasing the product. Mental activities include assessing expected satisfaction from the product in satisfying needs, taking into consideration previous experience and feeling about the product. These elements emanate both from the external environment and from the internal determinants. The external environment includes influences from self, family, culture, sub culture, social class and social group. The internal determinants include information search, attitudes, personality and self-concept, motivation, involvement and learning memory ( Loudon & Bitta, 1993:22). Cant *et al* (2002:21) conclude that 'individuals develop self-concepts, and subsequent lifestyles, based on a variety of internal (mainly psychological and physical) and external (mainly sociological and demographic) influences. These self-concepts and lifestyles produce needs and desires, many of which can only be satisfied by buying something. As individuals encounter particular situations, the customer

decision-making process is activated, that is, they decide to buy something. The experiences and acquisitions this process produces in turn influences the customers' self-concepts and lifestyles by affecting their internal and external characteristics'.

Assael (1987:11) makes use of figure 2.1 in order to explain consumer behaviour.

**Fig: 2.1 - A Simple model of consumer behaviour**



**Source : Assael (1987: 11)**

The central point of the model is decision making, that is, the process of perceiving and evaluating product information, considering alternative products and deciding on a product. Three basic factors in the model influence consumer behaviour. These basic factors are :-

- Individual consumer
- Environmental influence
- Marketing strategies

These factors are explained in detail in the succeeding paragraphs.

The first basic factor in figure 2.1 (p.38) is the individual consumer. His action is related to his thought variables, that is, perception of brand characteristics, attitude towards alternatives and needs, and to his demographic life-style and personality. Individual perceptions serve as the basis on which consumers process information displayed by advertisers, suppliers and other sources. Marketing strategy aims at the development of products and promotional stimuli that consumers would perceive as relevant to their needs. When consumers perceive such stimuli, they process the information contained therein with the result that there exists close relationship between consumer perception and information processing. Consumer perception can be selective based on his needs, attitudes, experiences and personality. The consumer may also, in view of the numerous advertisements he is exposed to, involve in some sort of perceptual organisation of disparate or conflicting stimuli. An example of a conflicting stimuli could be seen in deciding between a housing scheme and the intended purchase of another television set.

The consumer's attitudes towards brands are his tendencies to evaluate such brands in a consistently favourable or unfavourable way (Assael, 1987:176). Consumer attitudes in high and in low involvement differ. In high involvement decisions, the consumer forms beliefs about a brand based on his perceptions of the brand's attributes. He then forms an attitude towards the brand before deciding whether to buy or not to buy. In low involvement decisions, consumers generally buy products without forming an attitude towards brands. For example the purchase of an electric oven would require a high involvement of the consumer; whereas his involvement is low and routinised in the purchase of a flower. However, water as a product of consumption is different to other products. Firstly, people cannot forego water and secondly, water has no substitute. The author's opinion based on his thirty years experience in the water sector and based on the Mauritian context is that the consumer's involvement in acquiring a water supply can be high or low. High or low involvement depends on the

consumer's ability to pay. At times, consumers are subjected to severe hardships as their water supplies have been disconnected for non-payment of water charges. Where the consumer is encountering financial difficulties, the consumer's involvement for a water supply can be said to be high.

Consumer needs greatly influence consumer behaviour. Needs are the internal motivational states that are aroused by external and internal stimuli. Sources of external stimuli can be social, for example, a friend, a new information about a product or a new experience. An example of internal stimuli is hunger. Need arouses a state in the consumer which aims at achieving certain goals, for example, achieving fame. The consumer's purchases are directed towards achieving these goals.

A life-style is viewed as a mode of living. It is seen in the activities, interests and opinions of people ( Assael 1987:26). In other words, it is reflected in how consumers spend their time, in what is important to them in their environments and in their opinions, that is, what they think of themselves and the world around them. Life-style greatly influences consumer behaviour with the result that its characteristics are frequently used to identify market segments, to position products, and to define new products. The launching of McDonald in Mauritius could be quoted as a recent example.

Like life-style, personality is used to study consumer behaviour and to delineate consumer segments. However, personality is more deep-rooted in an individual. Personality variables reflect consistency and enduring patterns of an individual's behaviour rather than changes in his actual behaviour in different situations (Assael, 1987:277).

The second basic factor in figure 2.1 (p.38) which affects consumer behaviour is the environmental influence. This involves culture, social class, groups and situational determinants. Culture is by far among the most important

environmental influences affecting consumer behaviour. Culture is the sum total of learned beliefs, values and customs that serve to direct the consumer behaviour of members of a particular society (Schiffman & Kanuk,1996:409). Culture is reflected in the consumer's value system, for example, the importance attached to self-fulfillment. Differences in value systems seem to be associated with major differences in consumer behaviour (Tashuja, Gentry, John, Mauzer & Cho,1991:62). Literature on consumer behaviour recognises cultural values as a powerful force in shaping the consumer's motivation, life-style and product choices (Yau 1988:59). Thus, identifying commonly held values become central in applying culture to marketing.

Social class is a broad grouping on a social scale based on income, education and occupation. These characteristics define a person's prestige, power or position in the upper, middle or lower class. Members of a social class tend to share similar values, attitudes and behaviour in view of similar socio-economic positions. They tend to adopt similar purchasing behaviour. These social class criteria are used to identify market segments and to develop appropriate product characteristics and styles.

Groups exert considerable environmental influence on consumer behaviour. A group is defined as an association of two or more people who interact to achieve individual goals (Schiffman & Kanuk, 1996:325). Groups can be of different types, for example, primary, secondary, formal, informal, symbolic, friends and fellow workers. According to the same authors, the most influential groups are by far the informal primary groups in the form of family and peers. The effect of group influence and degree of conformity to group behaviour, norms and values depend on the group cohesiveness, proximity to the group, relationship to other members and the similarity of one's values and attitudes with those of other members (Loudon & Bitta, 1993:215). In other words, the influence of the group on an individual varies according to his personality and social character. The desire to imitate, be accepted by and belong to groups that serve as reference is present to varying degrees in individuals. People aspire towards reference social

groups because of the experience, information, credibility, attractiveness and power they possess. Every individual's social focus is viewed as directed upwards on the social ladder (Grunfeld, 2001:31). One example in favour of this assertion is that people strive to have money in order to improve their standard of living.

Another environmental factor which influences consumer behaviour is situation. Very often, behaviour varies with a change in situation. Situational influence has been defined as the influence resulting from factors that are particular to a specific time and place and independent of consumer characteristics, that is influence from product or publicity (Loudon & Bitta, 1993 :559). Four basic types of consumer situations are generally mentioned. These are communication situations where the consumer is exposed to personal and non-personal communication, purchase situation where the consumer acquires products, usage situation where the environment encourages purchase and consumption and finally the unexpected situation which influences a consumer to alter his decision. Situational determinants are important to marketers as brand preferences vary according to the reason for which the consumer purchased the brand (Assael, 1987 :489).

The third factor in figure 2.1 (p.38) is the marketing strategy which represents variables within the control of the marketer that are used to inform and influence the consumer. These variables include product, price, communication and distribution and are regarded as stimuli perceived and evaluated by consumers in their decision-making process.

A product is a good and/or service which satisfies the consumer's want. A product is not just physical. It has both tangible and intangible attributes which are important to the consumer for decisions on a product. According to Stanton (1984:180) a product is a set of tangible and intangible attributes, including packaging and prestige as well as both the manufacturer's and the retailer's services, which the buyer may accept offering want - satisfaction. Thus a

consumer buys more than is physically perceived in a product. For example, the purchase of a Mercedes car, especially, in a developing country, means more than just a car - it means status.

Price exerts considerable influence on a consumer's choice of a product or store. Price represents both the pecuniary cost of a product and indicates the expected satisfaction of the consumer. Consumers tend to associate a store's image to price based on expected prices and quality of products within the store. In the absence of objective information, consumers would be prompted to use price as indicator of quality. The effect of price on consumer behaviour requires the proper determination of the consumer's price perception, his price sensitivity and his price awareness of a product. This in turn allows the formulation of the right marketing strategy.

Communication is one of the variables in the marketing strategies mentioned in figure 2.1(p.38). According to Assael (1987:528), consumer information processing and ultimate decision-making require the exposure to, organisation of and search for information. Marketers communicate by mass media advertising, package information, in-store displays and personal selling. The communication of information by the marketer and the acquisition of same are important elements in the determination of consumer behaviour. Without communication, the consumer is hardly able to act and the marketer hardly able to sell. Communication is meant to inform and persuade. Information objectives may be directed towards informing the consumers of new products, changes in existing products, providing information on price and availability. Persuasive objectives may aim at convincing the consumer of product characteristic benefits, induce trials or reduce uncertainty after the purchase is made. Barriers to communication can occur at any point in the process. It can be at source, with the seller or with the receiver. Message rejection may be due to lack of credibility or due to the consumer's attitude, past experience and beliefs. However, the most

desired objective of communication process from the advertiser's stand is a purchase as a result of message acceptance.

The place of distribution as part of the marketing strategy in figure 2.1 influences the consumer's decision-making process and behaviour. The place variable involves consideration of how and where to offer products and services for sale. Decisions which are influenced by consumer behaviour include the type, number and location of retail outlets, the distribution arrangements and the image, and the customers whom the retailers need to develop (Loudon & Bitta, 1993 : 13).

## **2.8 CONSUMER BEHAVIOUR AS PART OF HUMAN BEHAVIOUR**

Consumer behaviour covers such a wide spectrum that it is considered as a subset of human behaviour (Loudon & Bitta, 1993 : 8). Factors which affect a person's daily life equally affect his purchasing behaviour. According to the same authors (1993 : 8), it is often difficult to draw a distinct line between consumer behaviour and other aspects of human behaviour. For this reason, the contributions of the behavioural sciences have been substantial in the understanding of consumer behaviour. The behavioural sciences that have most contributed to the understanding of consumer behaviour according to Loudon and Bitta ( 1993:8) are :-

- Psychology, which is the study of the behaviour and mental processes of individuals.
- Sociology which studies the collective behaviour of people in groups.
- Social psychology which is concerned with how individuals influence and are influenced by groups.



- Economics which studies people's production, exchange and consumption of goods and services.
- Anthropology, which is the study of people in relation to their culture.

Consumer behaviour encompasses all these disciplines. In like manner, the present thesis touches these disciplines. The research looks into the mental processes (psychology) of the domestic consumers of water in Mauritius, the group behaviour of these consumers (sociology), individual and group influences on these consumers (social psychology), the ability of these consumers to pay for water (economics) and cultural influences on these consumers in a multi-cultural setting which is that of Mauritius (anthropology).

Consumer behaviour has developed into a subject and study in its own right in view of the significant role it plays in the daily lives of people and of businesses. This aspect forms the subject matter of the next section.

## **2.9 CONSUMER BEHAVIOUR AS SUBJECT OF RESEARCH AND STUDY**

The study of consumer behaviour is part of the behavioural sciences. It requires the understanding of all components of the society. The social sciences have been of great assistance in this field of research and study. Behavioural scientists like Herzog (1958), Leavitt (1958), Glock and Nicosia (1964) have situated the relevance of consumer behaviour to marketing. Consumer behaviour is an indispensable tool in marketing; from the very initial stage of product conception to post consumption stage, including pricing, promotion, distribution channels and sales.

Scholars like Kassarjan (1971), Plummer (1985) and Farley (1996) are among psychologists for whom the personality aspect of consumer behaviour is vital for improving business marketing. A sound understanding of how consumer's personality helps in understanding his wants and needs, his

aspirations and motives, his behaviour as purchaser and consumer. The understanding of group dynamics at societal level and its application to marketing have been propounded by authors like Venkatesam (1966) and Beerden and Etzel (1982).

According to Engel, Blackwell and Miniard (1995), consumer behaviour can be explained from the following three perspectives:-

- The consumer influence approach which views the buying process as being of more concern to the marketing than the consumption process.

- The holistic approach which views purchase as being influenced by factors present in a society and as a single stage in whole buying process.

- The intercultural approach which views consumer behaviour not in terms of geographical or national boundaries but as a function of cultures and cross cultures.

At the core of these approaches, one thing common is that the basic consumer needs are universal phenomena, and so are the decision-making processes, although according to the same authors, differences in motivation and behaviour may be observed. The basic needs of man are the physical needs necessary for his survival like food and shelter. The consumer is required to take decisions in order to satisfy those needs. Although this decision-making process is present in all individuals, motivation towards same may be subject to influences by factors such as culture and environment.

The study of consumer behaviour is very dynamic. Ever since the subject was introduced by scholars in the 1950's, research on the subject has been going on. The qualification that can be attached to this can be seen in the words of Hoyer and MacInnis (2001:XV) who state that 'there has been an explosion of

research on a variety of consumer behaviour topics ..' This field of study is of interest to the individuals, to the marketers and to scholars alike. A sound understanding of consumer behaviour gives competitive advantage to the marketer in the market place. The marketer is accordingly able to predict the behaviour of the consumer and his reactions in personal, social and environmental situations. He is able to formulate the right marketing strategy, adapt to and influence the consumer's behaviour where circumstances so demand.

The study of human behaviour and society would certainly give a wider picture if it is supplemented by the study of consumer behaviour and factors both internal and external which influence the individual's decision-making and consumption processes. Hence, the continued interest of behavioural scientists and scholars in this field of research which does not only enrich knowledge and theoretical findings, but greatly benefit the world of business. As shown in the next section, consumer behaviour is of great importance to marketing in order to ensure the success of businesses.

## **2.10 CONSUMER BEHAVIOUR AND MARKETING**

The importance of consumer behaviour to marketing is clearly seen in the definition of consumer behaviour given by Kardes (2002:5), namely, that 'consumer behaviour is the study of human responses to products, services and the marketing of products and services'. Hoyer and MacInnis (2001:19) put forward a similar definition in that 'consumer behaviour provides critical information to marketing managers for developing marketing strategies and tactics'. To clarify their view, the authors reproduce Kotler's classic definition of marketing whereby marketing is defined as 'a social and managerial process by which individuals and groups obtain what they need and want through creating and exchanging products and value with others'. In similar manner, Loudon and Bitta (1993:9) state that marketing is ' the process of planning and executing the

conception, pricing, promotion and distribution of ideas, goods and services to create exchange that satisfy individual and organisational objectives'. According to Baker (1994:101), 'needs are essentially physiological and instinctive; but that such basic desires are subject to change by other factors resulting in specific wants'. Baker qualifies these other factors as psycho-sociological and/or socio-psychological, and goes on to state that collectively, the study of these influences or factors has created a whole new field of marketing usually referred to as 'Consumer Behaviour'.

A sound understanding of consumer behaviour is essential for the success of marketing strategies and plans, and therefore of the very existence of the firm. Consumer behaviour can be viewed as the very basis of marketing concepts. These marketing concepts can be seen in three inter-related orientations, namely, consumer needs and wants, company objectives, and integrated strategy (Loudon & Bitta, 1993:10). Marketers tend to identify needs and wants of consumers and provide goods and services as a means of satisfying those needs and wants. Since consumers' needs and wants are very wide, companies generally set their objectives that would allow them to effectively use their resources and gain competitive advantage in order to serve specific needs and wants of consumers. Finally, the marketer is able to adopt an integrated strategy that would be most effective in meeting the goals of the firm through consumer satisfaction. Furthermore, a sound understanding of consumer behaviour is essential in searching for market opportunities, in locating the target market and in establishing the right marketing mix. For example, it is important for the marketer to know how the consumer behaves and how he would respond to the marketing mix, namely, product, place, price and promotion, before formulating a marketing strategy.

Scholars generally view factors influencing consumer behaviour in two broad categories, namely, the psychological factors or the individual determinants and the environmental factors (Blythe, 1997, Hawkins *et al*, 2002,

Schiffman & Kanuk, 1996). The sections that follow thus deal with the individual determinants responsible for consumer behaviour, and the social and psychological factors influencing such behaviour. The consumer-decision making process is then presented. Some research findings are subsequently detailed before dealing with the models of consumer behaviour.

## **2.11 PSYCHOLOGICAL FACTORS INFLUENCING CONSUMER BEHAVIOUR**

Individuals have certain needs and wants that are common. In same manner, individuals have certain traits in them that determine their consumer behaviour. The individual determinants include personality, motivation, information reception and processing capability, learning and memory, attitude and lifestyle. This aspect of consumer behaviour is of particular interest to scholars and behavioural scientists and more so to marketers. This section gives a brief of the individual factors that can explain the individual behaviour and how these influence the individual's consumer behaviour.

### **2.11.1 Personality**

There does exist a relationship between personality of an individual and his acts and judgement. What one does cannot be fully dissociated from his own self. Consequently, the various aspects of consumer behaviour of the individual can be related to his personality. Personality has been defined by psychologists in a variety of ways. Some have focused on specific traits, others on hereditary and childhood influences, and still others on the social and environmental influences on the individual. Most psychologists have stressed that personality is integrative, including various processes, such as the individual's temperament, values, traits, attitude, motives, habits of responding to situations that interact with each other (Loudon & Bitta, 1993:299). In few words, personality can be defined as those psychological characteristics that determine and reflect how an individual responds to his environment and in different situations. It thus flows that an

individual's personality is bound to influence his purchase decision and his response to a firm's products and promotions. Hence, the importance of understanding personality characteristics and their association with consumer behaviour and the development of market segment strategies. As the thesis aims at studying the consumer behaviour of domestic water consumers in Mauritius, it becomes equally important to understand the individual. Some personality theories are detailed in the paragraphs that follow.

### **2.11.2 The Psychoanalytical Personality Theory**

Freud's psychoanalytical personality theory is built on the premises that unconscious needs and drives, specially biological drives, are the basis of an individual's personality. For him, the individual's personality is the result of the struggle among three interacting forces, namely, id, ego and super-ego (Loudon & Bitta, 1993:301).

The id operates on the pleasure principle, helps to avoid tension and seeks amusement. It operates at a very subjective and unconscious level and is not fully capable of dealing objectively. It may not be congruent with the values of the society. The ego supersedes the id in dealing with real situations through learning and experience. The ego develops the individual's ability of dealing with his environment. It rests on the reality principle. The superego is the moral side of the individual by internalizing the values of the society. It represents the ideals, demarcates right from wrong, influences the individual's ideal for perfection. It controls the desires of the id which could disrupt the social system, and influences the ego to strive for socially accepted goals. The ego is the individual's conscious control which attempts to balance or compromise the impulsive demands of the id and the socio-cultural constraint of the superego. Such compromise is said to operate at unconscious and sub-conscious levels (Loudon & Bitta, 1993:302).

The psychoanalytical theory has often been used to influence the consumer. In its application to marketing, the psychoanalytical theory is not restricted to the sensual side of man. Such application includes escape from life's stress, social pressures, aggression, fear, fantasy, wish fulfillment. Promotions based on this theory are not restricted to the id only. They range from id to the superego (Loudon & Bitta, 1993:302).

### **2.11.3 Neo-Freudian or Social Theories**

The neo-freudian school discards the psychoanalytical theory based on the id and upholds the idea that the individual develops his personality through attempts to deal with others in social settings, thus resulting in the social theories (Schiffman & Kanuk, 1996:134). The individual is seen as trying to overcome his feeling of inferiority and searching for love and security. Lack of affection, insecurity and inferiority are seen to be related to childhood experiences.

Loudon and Bitta (1993:304) report that Horney (1968) used the social theories in the study of consumer behaviour. Horney (1968) identified various needs acquired by the individual in trying to solve problems in personality development and in dealing with others in a social environment. These needs are classified as the complaint, the aggressive and the detached orientations. In the first case, the individual stresses to others the need for love, affection, modesty, fair play. They are humble, unselfish and emphatic. In the second case, the individual stresses the need for power, strength and ability to manipulate people and act against others. In the third case, the individual stresses the need for independence, freedom and self-reliance in dealing with others. Such individuals bear no strong feelings for others and keep away from people. The study by Horney showed a relationship between the consumer behaviour of the individual and his personality. Thus, individuals having different personalities and orientations tend to consume different products and brands. On a theoretical plane, the social theory of personality is understandable; but has had limited

application in marketing strategies for influencing consumer behaviour (Loudon & Bitta, 1993:305). It would be within the context of the research topic to also see whether the behaviour of the domestic water consumer in Mauritius is somehow affected by his personality and vice versa.

#### **2.11.4 The Trait and Factor Theories**

The traits and factor theories are personality concepts commonly used to explain consumer behaviour. The concept of trait rests on the propositions that the behavioural tendencies of a person are relatively stable, the degree of such tendencies differ in people and the relative difference between individuals serve to characterise their personalities (Loudon & Bitta,1993:308). Thus traits are general and relatively stable personality characteristics which influence behavioural tendencies and therefore the consumer behaviour of a person.

The factor theories rest on the quantitative factor of the analysis. This analysis identifies the relationship between a variety of personality measures among individuals. The logic of this theory is that the correlations of items in personality inventory across different testing situations reveal certain personality trait (Loudon & Bitta,1993:305). Thus a factor in a personality inventory is a general level variable used to identify personality traits. Traits and factor theories serve as a tool for the study of the consumer and his behaviour and to establish the relationship between his personality and his behaviour as a consumer. The implication is that such study helps to understand the consumer and relate same in the formulation of product and marketing strategies.

#### **2.11.5 Self Concept**

The self-concept which is but one's own image is a common means of relating the individual's self-concept to his consumer behaviour. Basically, the development of self-concept rests on the individual's interaction with others and



with his social environment (Schiffman & Kanuk, 1996:151). More than one theory has been put forward for self-concept development. The striking ones are described in the succeeding paragraphs (Loudon & Bitta, 1993: 310-312)

The actual self-image or self-appraisal theory reveals that an individual qualifies his own dominant behaviour pattern according to what is socially acceptable and what is not. He classifies his behaviour as 'social' or 'anti social'. Finally, his self-concept or self-image emerges in the manner he sees himself (Loudon & Bitta, 1993 : 310).

According to the reflected appraisal of self-concept theory, the individual sees others as his "mirror" to portray his self-image. The appraisals the individual receives from others serve to mould his self-image (Loudon & Bitta, 1993 : 310).

Social comparison theory reveals that a person's self-concept depends on how he sees himself in relation to others. Conversely, the self-image depends on how the individual would like others to see himself - hence, the development of the ideal self-image. The objective of the individual is to assert superiority and rank high in comparison to others. Dissatisfaction is the direct result so long as the objective is not met. Consumer behaviour, brand preference and conscious life-style go abreast in the development of the ideal self-image (Loudon & Bitta, 1993:311).

According to the biased scanning theory, the individual is viewed as scanning his environment for information to validate how well he is meeting his aspirations in terms of identity. Such scanning tends to be biased towards self-gratification as the individual is tempted to see himself as he would like to be (Loudon & Bitta, 1993:311).

The theories on the development of self-concept adopt different views of how people see themselves. Since different people view themselves differently,

all theories can be said to be true to varying degrees as generalities among the theories do exist (Loudon & Bitta,1993:317). The self-concept depends on how an individual perceives himself in relation to others, his aspirations, his own qualification on how others perceive him and his own reflection by others.

As regards consumer behaviour, individuals perceive image through products and brands which exhibit images of the consumer and of the purchaser. Thus the consumer would generally purchase products and brands whose images would be consistent with his view of his own self. In other words, a consumer would tend to purchase products and brands which would confer in him such image which he would wish others to perceive.

Self-concept or image has several and far reaching implications. As regards consumer behaviour, self-image has strategic implications for marketing. Marketers segment markets on the basis of consumer self-image and position products as symbols of such self-image. In this context, the marketer may use this concept to determine the needs of the market segment with respect to the product category and product symbol of self-image, and thus develop strategies for products. In the context of this study, the research tries to establish whether self-concept plays any part in the behaviour of domestic water consumer in Mauritius.

The section that follows is devoted to the individual determinants which influence consumer behaviour. These include motivation, information reception and processing, perception, learning, beliefs and attitude.

## **2.12 THE INDIVIDUAL DETERMINANTS AND CONSUMER BEHAVIOUR**

Psychological factors play an important role in the behaviour of consumers. Two consumers may have equal involvement in a product but may purchase different brands for a variety of reasons. One explanation for this difference in behaviour could be the difference of psychological factors on the information they

collect, the way they process and interpret it, and their evaluation of alternatives. Some of the important psychological factors according to Boyd, Orvilla, Walker and Larreche (1998) are motivation, perception, learning, belief and attitude.

### **2.12.1 Motivation**

Motivation implies a movement which can be towards or away from a given contact or situation. It is also associated with words like motives, needs, wishes, desires, likes, urges, goals and objectives. Hoyer and MacInnis (2001 54) define motivation as 'an inner state of arousal,' with aroused energy directed towards achieving a goal.

Motivation as a derivative of motive is equivalent to needs. Needs can be internal states or conditions whereby an individual experiences a certain deficiency or scarcity which can be either of a physiological or psychological nature. Whenever the needs are sufficiently aroused to push a person towards a certain action, the needs transform into drives. In other words, motivation is an activation of a need into a drive which is likely to result in a particular behaviour.

Different scholars have put forward different theories to explain motivation. The salient ones are the need or content theories, the process or cognitive theory, the reinforcement theory, and the social learning theory.

Need or content theories focus on what motivates people. They do not explore how the mind processes the needs in relation to other factors that can influence motivation. They suggest what the antecedents of motivated behaviour are. The theory of Frederic Winslow Taylor (1878) who advocates incentive as a means to motivation is quoted as an example (Rice, 1995:160). Taylor (1878), commonly known as the father of the Scientific Management Movement, made one of the earliest attempts to understand and to deal with the problem of worker motivation. Taylor advocated a system of wage incentives in order to encourage

workers to increase productivity. Abraham Maslow's (1954) hierarchy of needs theory ranging from the basic, first order needs to the highest, second order needs, namely, the physiological or biological, safety or security, social or belonging, self-esteem and self-actualisation needs is another example.

The process or cognitive theories go a step further and give a different perspective to the understanding of motivation. They attempt to explain how behaviour is aroused and energised. They focus on the cognitive or thought processes that precede or accompany motivation. Adam's Equity theory is quoted as an example (Rice, 1995:164). Feelings or perceptions of equity are at the heart of the equity theory. It is based on the fact that people are always comparing their efforts and the associated rewards with those of other people. Whenever there is a situation which involves an element of injustice or lack of fairness (not in an absolute basis) there is an imbalance. In such circumstances, the individual will try to engage in certain activities to reduce or remove the imbalance. The efforts that will be expended will demonstrate the level of motivation. According to Skinner (1938) as reported by Loudon and Bitta (1993:391), the reinforcement theory of motivation holds that behaviour is dependent on consequences. If the consequence of a behaviour is positive and pleasant, such behaviour will be repeated. On the other hand, if the consequence is negative and unpleasant, this behaviour will be discontinued. According to the social learning theory put forward by Rice (1995:254), behaviour cannot be explained by the learning process that an individual goes through in his experiences. At the same time, the personal and the environmental factors that influence the learning process as well as the behaviour cannot be excluded. The factors influencing consumer behaviour and researches and theories of motivation are of particular interest as these serve as convenient tools to motivate consumers and drive them towards specific goals.

People and therefore consumers are not the same due to heredity, early experiences, cultural differences and personal motivation. Sujan, Franke, Donthu

and Gardner (2001) reported the view of Mowen (2000) that individual differences in personality account for more variance in consumer behaviour than consumer researchers have acknowledged. They further mention the eight elemental traits identified by the latter which emerge from generic and early learning and which are the core to the effect of personality on consumer behaviour. These traits are:

- Openness to new experiences,
- Orderliness or conscientiousness,
- Extraversion,
- The need to be agreeable and kind,
- The tendency to be moody or temperamental,
- The need to collect and own material things,
- The desire for excitement, and
- The need to look after the body.

According to Mowen (2000), the effects of the elemental traits on consumer's behaviour are indicated by compound traits. These compound traits are a combination of the elemental traits and the cultural exposure and learning. Some of the compound traits are self-esteem, self-efficiency, need for learning, need for activity task orientation and competitiveness (Sujan *et al.* 2001:396)

For Mowen (2000), situational traits come next in order of importance. The situational traits are the consumers' propensity to behave within a situational context. They emanate from a combination of elemental and compound traits and the situational context. Surface traits come last in Mowen's hierarchy of traits. The surface trait ensues from the 'interplay of elemental, compound and situational traits and the disposition to act within category-specific contexts. Surface traits provide a valuable means for understanding existing criteria by which to assess consumer behaviour' (Sujan *et al.*, 2001:396). According to the same authors, Mowen's work prompts to recognise the importance of personality for consumer research. It identifies the eight mentioned important elemental

aspects of personality and suggests a process of influence that progressively includes situational forces.

### **2.12.2 Information Reception and Processing capacity**

Information reception and processing capacity have been classified as one of the individual determinants responsible for consumer behaviour. Loudon and Bitta (1993 : 352) have defined information processing ' as the acquisition of stimulus inputs, the manipulation of these inputs to derive meaning from them, and the use of this information to think about products or services.' They have identified five ways in which consumers use this information, namely,

- understanding and evaluating products and services.
- attempting to justify previous product choices.
- resolving the conflict between buying or postponing purchases.
- satisfying a need for being informed about products and services in the marketplace.
- serving as a reminder to purchase products that must be regularly replenished

The same authors have classified the components of information processing into four groups. The first group relates to the stimuli which serve as the raw materials to be processed. According to the authors, stimuli are the units of energy, such as light, which excite the sensing receptors as taste, touch, smell, vision and hearing. A given stimulus is normally part of a larger stimulus situation. The second group deals with the stages of information processing by the consumer. These stages include the information acquisition process, the perception encoding process, the integrative process and the outcomes.

The information acquisition process entails the exposure of the consumer to the environment. Depending on the importance of the issue involved, the

individual may engage in the active search for information or be a passive receiver of same. Loudon and Bitta (1993:354) explain that the consumer's exposure process through active search and positive reception acquires an almost unlimited number of stimuli. However, the individual sensory process produces sensation for only a specific range of stimuli. Also the individual selectively devotes attention to a small proportion of the resulting sensation. The sensations or raw inputs undergo a perceptual encoding process by the individual. This process develops personal meaning or information. As stated by the authors, 'consumers act on their own interpretation of the world, as opposed to what actually may exist'. This information processing is likely to influence an individual's behaviour, attitude and evaluation of objects and situations, choice and purchase. Acquisition of raw input or stimuli, perceived encoding and information processing have particular marketing implications, 'because consumers make decisions on what they perceive, rather than on the basis of objective reality' (Schiffman & Kanuk, 1996:195).

### **2.12.3 Perception**

People virtually receive, or sense, information through the five senses, namely, sight, sound, smell, touch and taste. Cant *et al* (2002:99) reproduce Solomon and Stuart (1997) to define perception as 'the process by which people select, organise and interpret stimuli to the five senses of sight, sound, smell, touch and taste'. In other words, it is the way that buyers interpret and give meaning to the world surrounding them.' The authors therefore add that ' the process of perception involves exposure to a stimulus, paying attention to it, interpreting its meaning in order to respond to it.'

Perception leads to information processing. As a person's specific psychological process, perceptions may vary among individuals, even in relation to a common stimuli. Psychologists attribute such individual differences to the combined effect of three perceptual sub-processing, namely, selective attention,

selective distortion and selective retention. In this context, the individual's selection of stimuli from the environment is based on the interaction of expectations and motives with the stimuli itself (Schiffman & Kanuk, 1996 : 177). As a psychological process, perception is a key requisite for information selection, organisation and interpretation in order to produce messages and meanings. As such, it is of interest to marketers for the influence it can have on consumer decision-making generally and on the way it can affect antecedent factors such as the reception and understanding of marketing communications.

#### **2.12.4 Learning**

There is no one definition of learning as learning theorists do not agree on how learning takes place (Schiffman & Kanuk, 1996:201). Rice (1995:114) makes mention of the two contrasting views on learning; namely, the behaviourist approaches and the cognitive approaches. The behaviourists are 'concerned with the observable behaviours. They believe that the mental processes are not observable and have therefore to be inferred.' For them learning is shown by changes in behaviour as a result of associations developed between stimuli and the consequential responses. They focus on learning resulting in behaviour change, that is, 'the process of acquiring, through experience, knowledge which leads to changed behaviour.'

The cognitive approaches 'emphasise the changes in knowledge and focus to the processes by which people learn information'. Learning therefore implies that the change in knowledge has been stored in the long term memory. Rice (1995:114) supports this view by reference to Hawkins, Best and Coney (1989) who define learning as 'any change in the context of organization of long term memory'. Rice further adds that "Engel and colleagues attempt to encompass the two contrasting views by defining it (learning) as the process by which experience leads to change in knowledge, attitude and/or behaviour'.



From a marketing point of view, Schiffman and Kanuk ( 1996:201) state that consumer learning 'is the process by which individuals acquire the purchase and consumption knowledge and experience they apply to future related behaviour'. Learning is very much relevant to marketers since consumers are affected by the things they learn and much consumer behaviour is based on the learning process. Persuading consumers to remember the information they came across in marketing communications is a responsibility and a challenge for marketers. For example, launching a brand successfully with all the communication skills it requires is good but not enough in that the sale of the brand has to be maintained through sales by sustained communications and other marketing techniques.

#### **2.12.5 Beliefs and Attitudes**

Social psychologists have put forward more than one definition of attitude. The three definitions mentioned here have been borrowed from Loudon and Bitta (1993:423). The first definition views attitude as a feeling or an evaluative reaction to an object. It states that 'an attitude is how positive or negative, favourable or unfavourable, pros or con a person feels towards an object'. The second definition drawn from Allport (1989) views attitudes to an object or class of objects in a consistently favourable or unfavourable way'. This definition contains the notion of readiness to respond to an object. The third definition adopts the cognitive approach in that it views attitude as 'an enduring organisation of motivational, emotional, perceptual and cognitive process with respect to some aspect of the individual world'.

Beliefs 'consist of the very large number of mental or verbal statements that reflect a person's particular knowledge and assessment of something'. Beliefs can be central, derived or central-free (Loudon & Bitta, 1993:477). Central beliefs form the core of a person's cognitive process, are deeply rooted to many

other beliefs, are quite resistant to change. Derived beliefs are an outgrowth of the central beliefs. The central-free beliefs are separate from the other beliefs.

From a marketing perspective, the success of a product depends to a large extent on the consumer's beliefs and attitudes towards it. Consequently, marketers deploy much effort for finding out consumer's beliefs and attitudes towards products offered by them and for changing those beliefs and attitudes, where relevant, for their benefits.

The items presented in this section are of particular relevance to this study. The research attempts at understanding what motivates the Mauritian domestic water consumer, his information and its reception, his perceptions on water supply and service, his learning process and his beliefs and attitudes.

The next section 2.13 deals with the social factors responsible for consumer behaviour. These factors include the social and situational influences, culture and sub-culture, social class and social groups, namely, reference groups and family.

### **2.13 SOCIAL FACTORS INFLUENCING CONSUMER BEHAVIOUR**

Individuals develop self-concepts and lifestyles based on a variety of internal and external influences. These self-concepts and lifestyles produce needs and desires which are often satisfied by the purchase and consumption of something. The internal influences which are also referred to as the individual determinants or psychological forces which affect consumer behaviour have been dealt with in section 2.11. The external influences, also known as the social factors affecting consumer behaviour, include social influences, situational influences, culture sub-culture, social class, reference groups, personal influence and family (Essoo & Chellum, 1999, Blythe, 1997, Loudon & Bitta, 1993). These external influences are dealt with in the sections that follow.

### **2.13.1 Social Influences**

The environment in which a person evolves has an influence on him, on his actions and behaviour. His needs, wants, evaluation of products and preferences are all influenced by the information and social pressures received from other people. The social influences affecting consumer behaviour include culture, sub-culture, social class, reference groups and family. These five categories represent a hierarchy of social influences which range from broad general effects on consumption behaviour such as those imposed by culture to more specific influences that directly affect a consumer's choice of a particular product (Boyd *et al* 1998). Social influences are particularly apparent when people consume a high involvement, socially visible goods and services, for example, the acquisition and use of a car. Apart from the social influences, a person's behaviour is likely to be influenced by situational factors. This aspect is dealt with in the next section.

### **2.13.2 Situational influences**

According to Cant *et al* (2002:175), customers do not act in isolation but are influenced by individual and environmental factors which are referred to as the psychological domain. These factors interact and play a preponderant role in the final outcome of the customer's choice. Hawkins *et al* (2002:478) refer to Belk (1975) and define situational influence as 'all those factors particular to a time and place that do not follow from a knowledge of personal (intraindividual) and stimulus (choice alternative) attributes and that have a demonstrable and systematic effect on current behaviour'. The authors explain that a consumer situation is, in other words, a set of factors outside of and removed from the individual consumer and from the characteristics of the product.

Hawkins *et al* ( 2002:478) mention four broad categories of situations that occur in the consumption process, namely, the communications, the purchase,

the usage and the disposition situations. In the communications situation, the consumer receives an information which has an impact on his behaviour. The situation may vary, for example, from the consumer being alone or into group, to being into a good or bad mood. A marketer is able to deliver an effective message to the consumer only if the latter is interested in a product and is in receptive communication situation. Finding potential buyers in receptive communication situations is a real challenge to the marketer. Purchase situations affect the choice of a product. For example, shortage of time can affect the place of purchase, the number of brands considered and the price a person is willing to pay. Usage situations are those which determine the consumption of a product. For example, the preferred beverage after an examination or after an illness or with parents will certainly not be the same. From a marketing perspective, marketers need to know the usage situations for which their products are appropriate. They can thus communicate how their products can satisfy consumers in specific usage situations. Disposition situations are those which affect the disposal of a product or product package before or after use of a product. Often consumers consider disposition facilities as an important attribute before purchasing the product. At times, the existing product has to be disposed before the new one is purchased as in the case of a microwave oven. Thus marketers need to know situational influences which affect disposition decisions in order to develop effective products and marketing strategies. Consumers' decisions regarding the disposition situation can be the cause of social problems in certain cases.

Hawkins *et al* (2001:481) have classified situations into five objectively measurable variables. These are physical features, social surroundings, temporal perspectives, task definition and ritual situations. Physical features include factors like geographical location décor and display of products. Marketing professionals make use of physical features in order to create situations and as a consequence create consumer interests in their products. Beauty products can be quoted as common examples. The social surroundings are the individuals who are present

during and influence the consumption process. For example, the menu chosen at a business lunch with foreign representatives will normally not be the same as one with parents. The temporal perspectives refer to the situations which deal with the effect of time on consumer behaviour. Time affects behaviour in diverse ways. One obvious example is that very limited purchase time available would limit information search by the consumer. For instance, a person with only ten minutes to complete a purchase will not be able to examine all the thirty or so brands of shampoos on the shelf. Task definition explains the reason for which a consumption activity is taking place. Hawkins *et al* ( 2002:488) state that ' the major dichotomy used by marketers is purchase for self use versus gift giving'. Gifts have symbolic meanings. The image and function of a gift indicates the giver's thoughtfulness and the impression of the receiver's image and personality. The nature of a gift implies the desired relationship between two persons. For example, the desired relationship represented by the gift of a pen and the gift of a compact disk player are quite different. The same authors refer to Rook (1985) and define a ritual situation 'as a set of interrelated behaviours that occur in a structured format, that have symbolic meaning, and that occur in response to socially defined occasions'. Ritual situations can range from completely private to completely public. For example, a prayer by an individual on his anniversary is a purely private ritual. On the other hand, the national celebration of the independence day of a country is a very public ritual situation. Situational influences may affect consumer decision-making directly and may also interact with product and individual characteristics to influence consumer behaviour. Situations are of great importance and concern to marketers. Marketers focus on consumers and design their marketing in order to affect and influence them in their decision-making in the light of situations that they face.

The subsequent sections 2.13.3 and 2.13.4 deal with culture and sub-culture. These are important elements responsible for consumer behaviour. The sections further present some research findings in that context.

### 2.13.3 Culture

Blythe (1997:90) defines culture as 'a set of values that are shared by most people within a group. The groupings considered under culture are relatively large, but at least, in theory, a culture can be shared by a few people. Culture is passed on from one group member to another, and in particular is usually passed down from one generation to the next. It is learned, and is therefore both subjective and arbitrary.' Culture is the total way of life of a society. It includes the beliefs, values, attitudes and forms of behaviour that are common to a society and considered worthy of retention.

Lowe and Corkindale (1998) refer to Carman (1978), Mc Craken (1986) and Yau (1988) in arguing that literature on consumer behaviour recognises values as a power force in shaping the consumers' motivation, lifestyles and product choices. They further state that differences in value systems across various cultures seem to be associated with major differences in consumer behaviour and in that respect make reference to Grunertt and Scherhorn (1990), Mc Craken (1986) and Tasuhaj, Gentry, Manzer and Cho (1991). They further state that values can help to explain the differences in behaviour of people in different cultures and these values tend to persist over time and quote Mc Cort and Malhotra (1993) in support of their argument.

According to Ackerman and Tellis (2001), cultural values and norms generally provide the basic explanations for similarities in the behaviour of individuals in a community and differences in the behaviour of individuals across communities. In the context of purchasing behaviour, values are desirable behaviour across situations while norms are appropriate behaviour in a situation. Consumers learn values and norms about the acquisition, consumption and disposal of products through socialisation in their communities.

Ackerman and Tellis (2001) rely on Lamal (1991) in their assertion that the social behaviour of a community is greatly influenced by language through which cultural values and norms are communicated. Among immigrants, communication is a major determinant for cultural orientation. Spoken language indicates an individual's cultural allegiance and his country of birth indicates his culture.

According to Ackerman and Tellis (2001), cultural orientation affects not only the meaning of the product after acquisition but also the actual shopping process. At the same time, shopping activity is a social event whose meaning is more closely tied to culture than the meaning of the product. The authors also report the view of Miller, Peter and Nigel (1998) who mention that shopping is part of a social relationship and the shopping place provides identity for its participants, especially for groups that might be losing their distinctive identity.

People go to the market not just for the utilitarian function, but also for the satisfaction they derive from the shopping environment. Thus shopping activity becomes more important than the purchase of the product itself. Ackerman and Tellis (2001) refer to Lehtonen and Maenpaa (1997) who view shopping for pleasure and for task as things distinct and suggest that shopping for pleasure can be an end in and for itself.

Ackerman and Tellis (2001) quote Miller *et al* (1998) in their argument that shopping behaviour can be learned behaviour from school and parents. It can also be social behaviour adapted from the society's norms which define what is desirable.

Like any other behaviour, shopping behaviour is subject to influence by norms of the social group with which one identifies oneself. An individual compares himself and adjusts his behaviour to reflect the behaviour of similar others.

Culture influences the decision-making, the purchase and the consumption behaviour of individuals. A sound understanding of culture is very important for marketers because marketing can only exist within a culture that is prepared to allow and support it, and second, it has to operate within boundaries set by the society's culture.

#### **2.13.4 Sub-Culture**

Subculture refers to a set of beliefs shared by a subgroup of the main culture. Even if, this subgroup would share most of the beliefs of the main culture, they share among themselves another set of beliefs that may be at odd with those held by the main group (Blythe, 1997:93). Subculture is usually identified through ethnic group, religion, value systems, nationality and geographical region. For example, in the case of Mauritius, the Mauritian culture is the main culture, while the Hindu culture or the Muslim culture is the sub-culture. According to Schouten and Mac Alexander (1995), subcultures of consumption are a distinctive subgroup of society that self-selects on the basis of shared commitment to a particular product class, brand or consumption activity. Residents of the same cluster exhibit similarity in their consumption patterns, whereas those in different cultures exhibit differences in their consumption of products. Cultural change tends to be slow since it is deeply built in people's behaviour. Blythe (1997:93) therefore views that from a marketing perspective, it is easier to work within a given culture or subculture than try to change it. The other elements present in the social environment and which account to a large extent for the behaviour of consumers are the social classes, reference groups, personal influence, the family and life-style. These elements are explained in succeeding sections 2.13.5 to 2.13.9.

#### **2.13.5 Social class**

Cant *et al* (2002 : 67) has reported the definition of social class 'as a group of people who are considered basically equal in status or community esteem who



socialise on a regular basis formally or informally and who share the same behaviour patterns.' Loudon and Bitta (1993:169) define social class 'as a group consisting of a number of people who have approximately equal position in society'. Such positions are rather achieved than ascribed. The Gymkhana Club in Mauritius may be quoted as an example of social class. Opportunities for both upwards and downwards mobility in social class do exist in so far as social class refers to two or more orders of people who are believed to be and are ranked by the community in superior and inferior positions. A person's social class is influenced by factors like education, occupation, ownership of property and income. Social classes exhibit status, are multi-dimensional, are hierarchical, restrict behaviour, are homogeneous and are dynamic. Social classes are of particular interest to marketers and researchers as the social classes go a long way in shaping consumer behaviour.

#### **2.13.6 Reference group**

According to Blythe (1997:93), a group is two or more persons who share a set of norms and whose relationship among themselves make their behaviour interdependent. They further quote Bearden and Etzel (1982) in that a reference group is 'a person or group of people that significantly influences an individual's behaviour'. In similar terms, Schiffman and Kanuk (1996 :329) define groups as 'any person or group that serves as a point of reference or references for an individual in forming either general or specific values, attitudes or behaviour.' This definition is reproduced by Cant *et al* (2002:63). The Lions Club in Mauritius for example constitutes a reference group. From a marketing point of view, reference groups serve as frames of reference for individuals in their purchase or consumption and for judging their attitude and behaviour. Reference groups are perceived as credible, attentive and powerful, and capable of inducing consumer attitude and behaviour change.

### **2.13.7 Personal Influence**

Personal Influence which takes place in the environment is best described as the effect of a person's attitude or behaviour as a result of communication with others. Blythe (1997:111) mentions that some people are more influential than others. Such individuals are generally looked upon as opinion leaders. Loudon and Bitta (1993 :166) have defined opinion leaders as 'those people who are able, in a given situation, to exert personal influence.' The authors note that opinion leaders can ' informally and subtly affect the behaviour of others towards products, either positively or negatively.' Opinion leaders exist at all levels of society. The relevance of personal influence to consumer behaviour is that marketers use opinion leaders to exert personal influence on consumers in favour of their products and services. Personal influence is often referred to as word of mouth advertising (Loudon & Bitta, 1993:262).

### **2.13.8 Family**

Of all the existing reference groups, the family is probably the most powerful in influencing consumer decision-making. This view comes from Blythe (1997:104). Authors generally agree on the definition of family which is defined as two or more persons related by blood, marriage, or adoption (Schiffman & Kanuk, 1996 : 349, Loudon & Bitta, 1993:323). Members of a family may be described as the most basic social group who live together and interact to satisfy personal and material needs.

The family provides the economic well-being of its members, emotional support, suitable family lifestyle and the socialisation of its members. From a consumer behaviour perspective, the family is responsible for consumer socialisation which is the process by which children acquire the skills, knowledge, and attitudes necessary to function as consumers. This socialisation process continues throughout a person's life. Marketers generally agree that the family is the basic decision-making unit. The family decision-making is the process by

which decision that directly or indirectly involve two or more family members are made (Hawkins, *et al* 2002:206). For marketing their products and services, marketers not only study the attitudes and behaviour of the decision-maker in the family but also examine the attitude and behaviour of the consumers of their products and services.

### **2.13.9 Lifestyle**

The lifestyle of an individual is another element which determines his consumer behaviour. A person's lifestyle or mode of living relates to how he spends his time and money and the importance he gives to certain aspects of life. 'It is an expression of a person's personality, including his interests, opinions, needs and social activities, as well as demographic characteristics such as age, gender and income' (Cant *et al*, 2002: 52). ' People from the same culture, social class and occupation may have very different lifestyles, expressed in their own activities, interests and opinions.

Lifestyle as such influences the consumer in the purchase of products' (Essoo & Chellum, 1999:16). For Rice (1995:265), lifestyle may be seen ' as an individual's attempt to achieve the desired self-concept given the constraints of the world'. Lifestyles of consumers are of a particular interest to marketers. In that context, psychographics or the analysis of lifestyles allow the marketers to segment consumers according to their lifestyles. Such segmentation focuses primarily on the consumer's activities, interests, opinions and attitudes, among others (Rice, 1995 :266). Loudon and Bitta (1993:60) report that the basic idea underlying psychographics is that 'the more marketers understand their customer, the more effectively they can communicate and market to them.'

The social factors presented in this section are particularly relevant to the topic of research. The thesis, *inter alia*, tries to establish the elements present in

the social environments which are responsible for the behaviour of domestic water consumers in Mauritius.

This section explained the individual, social and psychological factors influencing consumer behaviour. The next section is related to the attitude of consumers. It presents the three attitude components, namely, the cognitive, the affective and the conative attitude components.

## **2.14 CONSUMER ATTITUDES AND CONSUMER BEHAVIOUR**

Consumer attitude and consumer behaviour have been of interest to researchers, marketers and psychologists alike. Schiffman and Kanuk (1996:240) define attitude as 'expressions of inner feelings that reflect whether a person is favourably or unfavourably predisposed to some object'. Attitudes are an outcome of psychological processes. They are not directly observed; but are inferred from the acts and words of people. Schiffman and Kanuk further state that 'in a consumer behaviour, an attitude is a learned predisposition to behave in a consistently favourable and unfavourable way with respect to a given object, events or situations'. This definition is reproduced by Cant *et al* (2002:134).

Psychologists have endeavoured to construct models in order to understand consumer attitude and consumer behaviour. In this context, the tricomponent attitude model is worthy of mention.

### **2.14.1 The Tricomponent Attitude Model**

According to this model, attitude consists of three major components, namely the cognitive component, the affective component and the conative component (Schiffman & Kanuk,1996:242). These are explained in the paragraphs that follow.

### **2.14.2 The Cognitive Component**

This is the first of the three components of the tricomponent attitude model. It refers to a person's cognition or knowledge and perception about the object. Such cognition is acquired by the consumer's direct experience with the attitude-object and the related information from other sources. The knowledge and the perception that ensue therefrom take the form of belief. In other words, the consumer holds the belief that its attitude-object has certain attributes and that specific behaviour will bring about specific results. Consumer belief can thus be of two types, namely, informational and evaluative. Belief associated with product attributes are informational, while those associated with product benefits are evaluative beliefs (Schiffman & Kanuk, 1996:242). The consumer's beliefs are important to marketers in order to successfully position new products and services. Marketers make extensive use of market research to establish and influence the consumer's cognition and thus maximise market opportunities.

### **2.14.3 The Affective Component**

Cant *et al* (2001:137) have relied on Botha, Brink and Machado (1997) to explain the affective component of the tricomponent model. They mention that the affective component involves feelings and emotions towards an object. These feelings and emotions may be vague and general, may have been developed without any cognitive information or beliefs about an object; or alternatively may be the result of several evaluations of the product's attributes. For Kardes, (2002:182) affective responses or attitudes are powerful motivators. Positive affect encourages consumers to think about and do things that maintain positive affect; while negative affect encourages them to think about and do things that reduce or eliminate negative affect. Schiffman and Kanuk (1993:243) state that a consumer's emotions or feelings about a product constitute the affective component of an attitude. These emotions and feelings are often treated as primarily evaluative in nature. They reveal the consumer's assessment of the

attitude-object as favourable or unfavourable. Market researchers often endeavour to identify the affective attitude of consumers in order to establish the overall feeling about a product or service.

#### **2.14.4 The Conative Component**

The third and final component of the tricomponent attitude model is the conative component. It is concerned with the likelihood that a consumer would act or behave in a particular way with regard to an attitude-object (Schiffman & Kanuk 1996:244). The conative component may not include the actual behaviour. Blythe (1997:71) expresses a similar view in stating that conation may not always result in behaviour as consumers may have second thought or other factors may prevent them taking the course of action originally planned. Cant *et al* (2002:137), make the use of the term behavioural component instead of the conative component. Furthermore, the behavioural component is the outcome of the cognitive and the affective components whether to buy or not. The behavioural component is seen in the intention to buy and in actual buying. The intention to buy a product may not always result in actually buying it due to intervening factors such as preference for another brand and unaffordability. From a marketing point of view, knowledge of consumer's conative attitude towards a product is important for ensuring market success.

The cognitive, affective and conative components of consumer attitude are interrelated and tend to be consistent. A change in one attitude component tends to produce changes in the other components. The tricomponent attitude is useful for studying consumer behaviour. At the same time, it helps marketers in developing strategies for changing or consolidating consumer attitude towards a product as may be required for market success. According to Blythe (1997:74), this can be done by adding new salient beliefs, by changing the strength of a salient belief, by changing the evaluation of an existing salient belief and by making an existing belief more salient.

It would be equally relevant to add a few words on the theory of reasoned action. According to this theory, consumers evaluate the consequences of alternative behaviours. They would then choose the one with the most positive consequences. The consumer's 'belief' about the behaviour and the evaluation of possible main consequences would combine to produce an attitude towards the behaviour. This theory assumes that consumers perform a logical evaluation for deciding a behaviour. Such evaluation is based on attitude towards the behaviour which in turn is based on attitudes towards the product (Blythe, 2002:78). Like the theory of tricomponent attitude model, the theory of reasoned action incorporates a cognitive component, an affective component and a conative component. This theory integrates the three attitude components into a structure which serves to better understand and to better predict consumer behaviour.

Attempt is made during the course of the research to discuss the attitudes of the domestic water consumers of Mauritius within the tricomponent attitude model. The next section deals with research findings with regard to the psychological principles which allow to influence consumer behaviour.

## **2.15 HUMAN ATTITUDES AND CONSUMER BEHAVIOUR**

The tricomponent attitudes model and the theory of reasoned action are the results of psychologists' research which help to understand, predict and influence consumer behaviour (section 2.14 pp. 72-75). Other social psychologists have endeavoured to understand the psychological laws which enable to change human behaviour. Cialdini, Rhoads and Kelton (2001:8) have put forward six basic psychological principles that allow to predict and influence consumer behaviour. These are reciprocity, scarcity, authority, consistency, liking and consensus. These principles have been explained by the authors as mentioned in the following paragraphs.

### **2.15.1 Reciprocity**

Cialdini *et al* (2001:8) explain that reciprocity is a world phenomenon which obliges people in all societies to return in kind what they have received from others. The authors have reported that gifts in cash or kind in the conduct of market surveys increase the rate of response, thus allowing to uncover with more accuracy the consumer's likes and dislikes, feelings and attitudes and build up marketing strategies.

### **2.15.2 Scarcity**

According to Cialdini *et al* (2001:8), items and opportunities become more and more attractive to consumers as they become less and less available. This assertion according to them holds true even when such items are not desirable. Items which are popular among consumers create considerable consumer reaction once these are removed from the market. In similar manner, according to the authors, an individual would experience the desire for freedom when it is limited. Based on this reality, marketers make use of 'limited time only' and 'limited supply' techniques to effectively appeal to consumers. The authors report the result of further research which indicates that people are attracted to scarce items when they are in competition with other consumers. This implies that 'limited supply' appeals resulting in social competition would be more effective than 'limited time' appeals.

### **2.15.3 Authority**

People often look for expert authority as regards information and guidance. However, the authority has to be credible in order to be successful and influential. A credible source is one which is both expert and trustworthy. People tend to easily accept advice and directives of credible authorities. While the business would often rely on expertise and experience to consolidate credible authority, this



credibility will be fully effective if properly communicated. In this context, communications must display the trustworthiness of their information (Cialdini *et al*, 2001:8). The authors further add that another way for creating trust is for communications to be fair and impartial and give both sides of the argument. Expert authority and its trustworthiness are important elements which allow marketers to influence consumer behaviour.

#### **2.15.4 Consistency**

Cialdini *et al* (2001:8) report that a considerable amount of influence on consumer behaviour results from tapping into commitments already in place rather than establishing new commitments. Thus, marketers endeavour to identify the deep-seated commitments that dictate consumer behaviour. They try to establish the relationship between products and pre-existing consumer commitments. These exercises allow the marketers to gain better knowledge of consumer attitudes and values that drive their decisions. They are thus in a better position to develop new strategies that are in line with the pre-existing desires and values of customers.

#### **2.15.5 Liking**

It is but too obvious that people tend to agree with those they like and at the same time dislike those who display certain congenial characteristics. Cialdini *et al* (2001:8) have in their article referred to three characteristics for liking. They mention physical attractiveness as one of the characteristics. They quote Canadian researchers who found that physically attractive candidates scored several times as many votes than unattractive candidates. Co-operation is another attribute that creates liking among people. Individuals tend to express positive feeling and behaviour towards those who are willing to co-operate. The third characteristic that creates liking is the similarity among individuals. The authors situate these attitudes in the context of consumer behaviour by reference

to sales training programmes whereby trainees are prompted to mirror and match the consumer's body posture, mode and verbal style as similarities in order to achieve positive market results.

#### **2.15.6 Consensus**

Cialdini *et al* (2001:8) have in their article made reference to psychologists Susan Fiske and Shelly Taylor who identify humans as 'cognitive misers', that is, beings who are burdened with processing demands that far exceed their time frames and mental capacities. Consequently consumers tend to have means at coming to the correct decisions without much of mental strain. One way for consumers coming to satisfactory decisions is to find out consensus among similar groups of consumers. Consumers often validate their own choice through the actions of others. This process is referred to by the authors as social validation by consumers. Consensus thus stands as an effective tool to influence others in the field of marketing. Marketers use social validation and consensus to stimulate compliance among potential target groups. The authors referred to above also report that communication campaigns which are meant to eradicate an undesirable behaviour may in fact generate more of that behaviour.

Cialdini *et al* (2001:8) have in their article referred to above, established the principles of persuasion that can apply in business and other situations alike. The persuasive principles would stand in favour of all concerned if used and practised honestly. The six basic psychological principles, namely, reciprocity, scarcity, authority, consistency, liking and consensus can be of great help to marketers in predicting and influencing consumers.

The review now proceeds with the presentation of the consumer decision-making process.

## **2.16 CONSUMER BEHAVIOUR AND THE CONSUMER DECISION-MAKING PROCESS**

Consumer behaviour has a bearing on the decision of the consumer. This decision-making process goes through stages. Blythe (1987:118) has reported the following five stages of consumer decision-making process outlined by John Dewey (1910) at the beginning of the previous century:

- A difficulty is felt (need identification).
- The difficulty is located and defined.
- Possible solutions are suggested.
- Consequences are considered.
- A solution is accepted.

These stages can be extended in more than one way. For the present purpose, these are related as follows:

- Problem recognition.
- Pre-purchase activities or search.
- Evaluation and purchase decision.
- Act of purchase and consumption.
- Post-purchase evaluation.

The paragraphs that follow give an insight of the decision-making process by the consumer.

### **2.16.1 Problem Recognition**

Consumer behaviour can be seen as a decision-making process that takes the form of problem-solving behaviour (Cant *et al*, 2002:173). The consumer decision starts when the consumer undergoes a consumption problem that needs to be followed (Hoyer and MacInnis, 2001:199). This experience undergone by the consumer is termed as problem recognition. The definition of problem

recognition by different authors are generally the same. Cant *et al* (2002:176), state that “problem recognition is an awareness of the need to change the existing state to conform to the desired or ideal state.” The same authors (2002:120), quote the view of Assael (1992) that problem recognition and need activation are essentially the same and goal-directed behaviour.

Hawkins *et al* (2002:608) define an actual state as ' the way an individual perceives his or her feelings and situation to be at the present time'. The same authors add that 'a desired state is the way an individual wants to feel or be at the present time'. The individual's desire to solve a recognised problem depends on the magnitude of the discrepancy between the desired and the actual states. It also depends on the magnitude of the problem. Consumer problems can be active or inactive. According to the same authors, an active problem is one the consumer is or will be aware of in the normal course of events; while an inactive problem is one of which the consumer is not aware. The recognized problem of the consumers may also be due to factors beyond the control of marketers. Such factors include culture, sub-culture, social status, family, financial situation, motives and emotions.

Problem recognition is the first stage in consumer decision- making. Cant *et al* (2002:74) define customer decision-making as “a cognition process that consists of those mental activities that determine what activities are undertaken to remove a tension state caused by a need .” In like manner, Hawkins *et al* (2001:504) view consumer decision as a process whereby an individual carefully evaluates sets of products and services and rationally selects the one that will solve a clearly recognised need at the least cost.

Problem recognition is of particular interest to marketers who develop a variety of strategies to convert consumer problems to their advantage. At times they influence problem recognition rather than react to it. Moreover, they attempt to activate problem recognition by focusing on the desired state. They further attempt to influence the timing of the problem recognition by making consumers

aware of the potential solution before they arise. Finally they attempt to minimise the problem recognition by presenting their own products.

### **2.16.2 Information Search**

Once a problem, which is likely to lead towards some action is recognised; the consumer engages in search for information which will assist him in decision-making. While information is the knowledge about some fact or circumstance, search refers to mental or physical information seeking and processing which ultimately leads towards decision-making. (Loudon & Bitta, 1993:504). In similar terms, Cant *et al* (2002:178) describe consumer search ' as the mental and physical activities undertaken by customers to obtain information on identified problems'.

Loudon and Bitta (1993:505) state that the search for information can be at pre-purchase stage or on-going. The customer might also engage himself in internal search or external search. Pre-purchase search is the typical form of search preceding a purchase if a problem is recognised. In on-going search, information seeking is of a permanent nature independent of any need or problem solving. In internal search, the consumer engages in a mental process of reviewing and receiving information stored in the memory. This is the first stage that occurs after the consumer has recognised a problem. The result of internal search and evaluation may be that the consumer makes a decision to proceed with a purchase, is constrained in his decision by external factors or feels he has inadequate information to make a decision. Consumers also engage themselves in external search. Here information is sought from outside sources to supplement information from one's own memory. External search is liable to be affected by individual differences and environmental influences.

Schiffman and Kanuk (1996:563) state that consumers seek information through word of mouth communication, from sales people, from mass media

communication and from consumer reports. Loudon and Bitta (1993:507) have grouped the sources into three major areas. The marketer-dominated sources are the salespeople, packaging and sources under the control of marketers. Consumer sources include interpersonal communication not under the control of marketers. The neutral sources include Government reports and publication from independent agencies. The amount of search for information especially external search varies among individuals and purchase situations. It also depends on the availability of the consumer to appreciate and evaluate the information. The consumer will continue to search for information as long as he perceives the benefit of the search to be greater than its cost. The cost of information search includes, among others, time, foregoing other pleasant activities, money. The benefit of information search is that it gives the consumer an assured feeling of making an internal purchase; increases the chances of making a purchase that would give satisfaction; gives satisfaction of being knowledgeable about the product; gives pleasure in shopping; can result in pecuniary gains apart from satisfaction to be derived out of a purchase (Loudon & Bitta, 1993:508).

According to the same authors, factors affecting information search directly or indirectly are in market conditions, for example, price, style and appearance alternative products available; buying strategies of the consumer, for example, brand preference and loyalty; individual factors, for example, experience, confidence, economic situations, ability to process information, beliefs, etc; situational factors like urgency of need, special opportunities, for example, price, store conditions and risks in effecting a purchase.

Cant *et al* (2002:179) conclude that 'one of the main challenges facing marketing is to present consumers with information on which to base their decisions'. They further reproduce the view of Ariely that 'controlling the information flow can help consumers better match their preferences, have better memory and knowledge about the decision they are examining and be more confident in their judgement'.

### 2.16.3 Evaluation of Alternatives

While engaged in information search, the consumer is also engaged in information evaluation. These processes allow the consumer to establish alternative solutions and ultimately come to a decision (Loudon & Bitta, 1993:513). Cant *et al* (2002:181) state that customer evaluation of alternatives 'is the act of identifying alternative solutions to a problem and assessing the relative merits and demerits of each' according to pre-established criteria and the limits which customers decide are acceptable when searching for a solution to their problem'. In other words the evaluation criteria are the standards which the consumer uses to compare and evaluate alternative products and services. These criteria can generally be categorised as salient, determinant and critical. The salient criteria are those that are considered as important. The determinant criteria are those that are considered as very important. The critical criteria are those considered as the most determinant attribute by the consumer (Loudon & Bitta, 1993:513).

Evaluation criteria may vary among products. They may also vary with time as consumers gain more information and experience. Cant *et al* (2001:181) argue that the evaluation criteria are moulded and influenced by individual and environmental variables. The individual variables include personality and attitudes. In this context, the authors quote Schiffman and Kanuk who have identified four types of individuals involved in decision-making. The first type is the economic individual who takes a calculated rational decision in light of complete information. The second type is the passive individual who is not knowledgeable and can be influenced by the marketer. The third type is the emotional individual who takes decisions entirely on personal and irrational needs. The fourth type is the cognitive individual who takes decisions based on information from the environment, on social influences, on personal needs, attitudes, perceptions and previous experiences.

The search for information by the consumer and the display of information through promotions by the marketer increase the range of alternatives to the consumer. Loudon and Bitta (1993:518) explain that certain alternatives may not retain the interest of the consumer because the alternative may be beyond his financial possibility, his motives may not be fulfilled, he may lack information for a complete evaluation, he might not have been satisfied in the past, he might have received a negative feedback, he might be perceiving the current brand/product as good.

The authors further state that the whole set of alternatives to the knowledge of a consumer can be divided into three subsets, namely, the evoked, the inert and the inept sets. The evoked set contains the few selected brands which are valued as positive by the consumer for purchase and consumption. The inert set consists of alternatives from which the consumer perceives no benefit and are evaluated as neither positive nor negative. The inept set refers to alternatives which have been rejected because of adverse reports and experience.

As a general rule, the authors argue that the greater the urgency of need, the lesser is the evaluation process; the greater the significance of the product, the lesser is the evaluation process; the greater the complexity of the alternatives, the greater is the evaluation process.

Ultimately, the alternative evaluation process may lead to one of the following results:

- The consumer may have found a product which satisfies his recognised problem and he stops searching information.
- The consumer may give up further search as he has not identified an acceptable product.



- The consumer may continue search as he has not yet come across an acceptable alternative.

Cant *et al* (2002:182) summarises that 'evaluation brings the consumer to a point of making decision as a specific course of action'.

Influencing the consumers' evaluative process is not an easy task. Thoroughly embedded criteria in the minds of consumers are difficult to change. On the other hand, criteria that are contrary to a consumer's common sense will certainly be rejected by a large segment of the market. From a marketing perspective one of the important tasks of the marketer is to influence the consumers' evaluative process so that his products are in the evoked set of alternatives.

#### **2.16.4 The Decision**

In the next stage the consumer makes his decision. The classic definition of decision comes from Schiffman and Kanuk (1996:555) who in the most general terms describe it as 'the selection of an action from two or more alternative choices.' Wisniewski (1995:377) states that 'the critical part of this process is then reached where a decision must now be made. Of the alternatives which have been generated and then evaluated, a choice must be made as to which is most preferable and feasible'. In similar terms, Cant *et al* (2002:182) state that 'consumer decision is the outcome of evaluation, and involves the mental process of selecting the most desirable alternative from a set of options that a customer has generated.' The same authors further add that 'the most suitable choice is the one that comes closer to the evaluation criteria formulated by the customer. It is the data obtained as a result of search action and effort that lays the foundation for the 'evaluation and decision.' For Kardes (2002:108), a decision, that is, choice involves selecting one product from a set of possibilities. Consumers either buy the product or they do not - there are no in between.

The consumer's decision to purchase or reject a product or service is important from more than one point of view. It gives an insight of the consumer's individual and social environment. From a marketing perspective, it shows whether or not the marketer's strategy was successful and enables him to improve.

### **2.16.5 Post-purchase Consumer Behaviour**

Post-purchase, as the word suggests, is the final stage in consumer behaviour. A purchase results in expenditure to the consumer, but makes available to him a product which he expects will fulfill his need for it. The results of the purchase may have more than one dimension. As in any other circumstances, the consumer has to establish whether his decision to purchase the product was the right one. He evaluates the performance of the product in the light of expectations. Cant *et al* (2002:182) explains that post-purchase behaviour 'involves a customer's evaluation of the performance of the product, in relation to the criteria, once it has been bought, that is, it is the consumer's perception of the outcome of the consumption process.' Schiffman and Kanuk (1996:579) have grouped post evaluation by the consumer into three categories. In the first case, the performance of the product can be as expected. The feeling of the consumer will be neutral in this case. In the second case, the performance of the product may be above expectation, causing a positive disconfirmation, which leads to satisfaction. In the third case, the performance of the product may be below expectation leading to negative disconfirmation which leads to dissatisfaction. Cant *et al* ( 2002:182) further explain that post-purchase involves different forms of psychological processes that consumers experience when buying a product. According to them, post-purchase learning is one of such processes. They refer to Wilkie (1990) to explain post-purchase learning which 'means that after buying something, the customer discovers something about a product or service, stores this new knowledge in his long term memory, modifies relevant attitudes, and is ready for the next decision process with an improved base of knowledge'.

The consumer expects satisfaction of a purchase. Loudon and Bitta (1993: 579) refer to Hunt (1977) and explain that ' a kind of stepping away from an experience and evaluating it. One could have a pleasurable experience that caused dissatisfaction because even though pleasurable, it was not as pleasurable as it was supposed or expected to be. So satisfaction/dissatisfaction is not an emotion. It's the evaluation of an emotion'. Cant *et al* ( 2002:183) state that ' satisfaction occurs when the outcome and the conditions surrounding the product are matched with the customer's expectation. In the same breath, the authors explain that consumers express dissatisfaction when the outcome does not match their expectation or when they feel that the product fall short in significant ways'.

Product satisfaction or dissatisfaction may affect a consumer's behaviour, his future information processing and decision-making process. Loudon and Bitta (1993 : 581) explain that satisfaction from a product is likely to result in more favourable post-purchase behaviour, more purchase intentions and more brand loyalty. The consumer is likely to exhibit the same behaviour in similar situations and continue to purchase the same brand. However, if the consumer is dissatisfied, his post-purchase attitude will be less favourable towards the product or brand. Such consumers may adopt a complaining behaviour. They may either express their dissatisfaction by word of mouth, complain to the seller, to Government Bodies, alert public opinion through the media, or depending on the magnitude of the money involved even claim redress.

Apart from satisfaction or dissatisfaction with a product, writers in the field have argued that the consumer may also experience dissonance, also referred to as cognitive dissonance. Loudon and Bitta (1993 431 ) refer to Hunt (1977) and state that cognitive dissonance is a psychological state of mind which occurs when a person perceives two cognition or thoughts which he believes to be true but seem inconsistent and do not fit together. In other words, cognitive dissonance occurs as a result of discrepancy between the consumer's decision and its prior evaluation. Cant *et al* ( 2002:184) use the terms 'post-buying conflict'

and 'post-buying dissonance' to finally explain cognitive dissonance. They argue that careless customers undergo post-buying conflict. Sometimes customers undergo post-buying conflict and question whether they made the correct decision or should have bought a different product. Customers may experience doubt or anxiety, especially after making a difficult, important and rather permanent decision. This type of anxiety is called post-buying dissonance. The authors refer to Hawkins *et al* (1996) to further explain that customers try to reduce this dissonance by changes in cognition and attitudes : 'They will find a balance in their psychological field by seeking supportive information or distorting information regarding the product or service'. This response is termed as cognitive dissonance. The effect of the dissonance is that it creates tension. The individual may be prompted to harmonise the inconsistent ideas and thus reduce tension.

The post-consumption stage also includes the disposal of products after use. Very often, consumers may wish to dispose of products because of changes in their roles and lives. Changes do occur in people's lives, for instance, an educational success, career development, on marriage, financial success, in status etc. In order, to adapt to a new life style and to be in line with their new roles, consumers may dispose of some of their products/belongings. The disposition of products actually goes through a process of problem recognition, information search, evaluation, disposition decision and post-disposition results (Loudon & Bitta 1993:590). A consumer may opt to keep a product, get rid of it temporarily or permanently, or trade it off. At times, manufacturer and sellers provide information and assistance as regards disposal of products. It is also an important item for policy makers and authorities to deal with in order to preserve the environment and to facilitate the life of people.

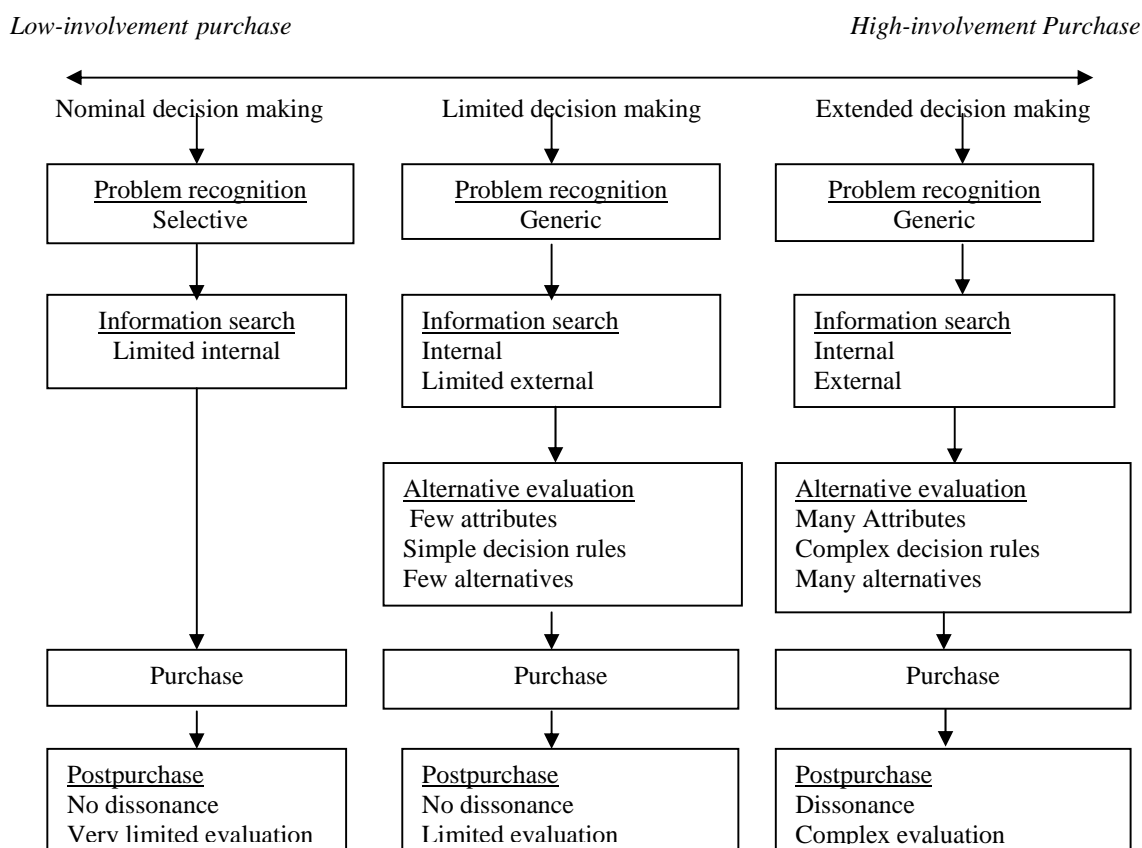
Post-purchase consumer behaviour is as important as any other aspect of marketing. While every effort is made for the success of the product and satisfaction of the consumers, it is essential for the marketer to establish whether the consumer has been satisfied or not. Positive responses from consumers prove the success of marketing strategies. Negative responses provide essential

feedback for corrective action. These ultimately allow the marketer to adjust his product and marketing strategies.

## 2.17 TYPES OF DECISION- MAKING

Types of decision-makings are generally grouped in three categories, namely, nominal decision-making, limited decision-making and extended decision-making. A schematic representation of the consumer's involvement is reproduced in figure 2.2 (Hawkins *et al*, 2002:505).

**Fig. 2.2 Involvement and Types of Decision Making**



**Source: Hawkins *et al*, (2002: 505)**

Hawkins *et al* (2002:505) refers to fig. 2.2 to explain the various types of consumer decision process and the consumer involvement in those processes. According to the authors, the decision-making becomes more complex as the

consumer moves from 'a very low level of involvement with the purchase of a product to a very high level of involvement'. Low involvement requires nominal decision-making; while high involvement means extended decision-making. Limited decision-making is the situation in between low and high involvements.

Nominal decision-making is also referred to as habitual decision-making and in effect it involves no decision. In this context, when a problem is recognised, very little internal information search is undertaken and the memory provides a single solution. After the purchase, the consumer experiences no dissonance and carries out very limited evaluation of the product. Limited decision-making lies between nominal and extended decision-making (Hawkins *et al*, 2002:506). In limited decision-making, a problem is recognised for which there are several possible solutions. The consumer undertakes internal and a limited amount of external search. This is followed by an evaluation of a few alternatives using simple selecting criteria. Little evaluation is given to the purchase and use of the product unless the consumer faces a problem later on. During the postpurchase stage, the consumer experiences no dissonance and carries out limited evaluation of the product. As regards extended decision-making, the same authors state that it involves an extensive, internal and external information search followed by a complete evaluation of multiple alternatives. Extended decision-making requires a high level of consumer involvement. During the postpurchase stage, a thorough or complete evaluation of the purchase, and of the use of the product takes place. The consumer may finally experience dissonance or satisfaction. There is general agreement among scholars as regards the definition of nominal, limited and extended decision-making. In this respect, Schiffman and Kanuk (1996:221), Rice (1995:141), Assael (1987:12), and Loudon and Bitta (1993:485) are quoted as examples.

Sections 2.18 to 2.25 which follow contain further research findings in the field of consumer behaviour. These findings are discussed in the course of the research.

## 2.18 UNIFORMITY AND CONSISTENCY IN CONSUMER BEHAVIOUR

Is consumer behaviour uniform and consistent? This section deals with this aspect. Foxall (1999) has in his article entitled 'The behavioural perspectives model - consensibility and consensuality' reported the views of Baker (1968), Taylor (1988) and Canter (1977) that the consistency of human behaviour is maintained by its social and physical setting irrespective of the personal dispositions of the individual. The idea is taken up by Foxall (1999). Thus different but unique and predictable consumer behaviour is exhibited by the individual in different commercial environments. Foxall refers to Stresser (1973) and reports that the changes in people's behaviour are more readily predictable in relation to changes in the environment than the personal psychologies they carry with them. Also the peculiar pattern of behaviour in each environment persists over time, although the people who perform it are replaced.

According to the theory put forward by Foxall (1999) and referred to in the article under reference, aspects of consumer behaviour can be predicted from two dimensions of situational influence. These are:-

- (i) the consumer behaviour setting,
- (ii) the utilitarian and information reinforcement signalled by the setting as primed by the consumer's learning theory

This theory adopts a different route to those of the cognitive consumer research in which the basis of consumer behaviour are sought in information processing by the individual. As mentioned in the article, according to Foxall (1999), the behaviour in the situations at (i) and (ii) is the result of the interaction between the "discriminative stimuli" that comprise the behaviour setting and the individual's history of "reinforcement and punishment" in similar setting. Thus consumer situation is defined at the intersection of setting and history and

consumer behaviour is explained by situating it in time and space, that is, it is contextualised (Foxall 1999).

## **2.19 VALUE AS PERCEIVED BY CONSUMER**

The continued consumption of a product or service depends on the value it represents for the consumer. In order to be successful in a competitive environment, an organisation needs to provide more value than its competitors. Hawkins et al (2002:11) define customer value as the 'difference between all the benefits derived from a total product and all the costs of acquiring those benefits.'

Value creation is often part of an organisation's goal. Sweeney (2001:203) quotes Albrecht (1992) who argues that 'the only thing that matters in the new world of quality is delivering customer value'. For Harnett (1998), as reported by Sweeney (2001:203), value is seen in the satisfaction of people- based needs. The same author reports Burden's view that 'successful retailers increasingly target their offer towards two consumer categories, namely, those with an emphasis on value and those for whom time pressure is the key'. Sweeney quotes Zeithaml's (1988) definition of consumer perceived value as the 'consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given'. Another common definition comes from Age who defines value as the trade off between quality and price which is the value for money (Sweeney, 2001:203).

Sweeney (2001:203) views that quality and price have different effect on value for money. The author refers to Zeithaml (1988) who argued that some consumers perceive value, when price is low; while others perceive it when there is a balance between quality and price. Still some consumers perceive value from all 'get' and 'give' components. The author further relies on Bolton and Drew (1991) in stating that considering value as a trade off between only quality and



price was too simplistic and quotes Porter (1990) who viewed superior value to the customer in terms of product quality, special features, or after sales services.

Sweeney (2001:203) states that consumer research which originally focussed on cognitive decision-making has evolved to include intrinsic aspects whereby an object is valued for its own sake. However, the same author adds that establishing the value of an object based on the utilitarian criteria only was rather limited in scope. The author gives the broader definition of perceived value from Sheth, Newman and Gross (1991) who viewed 'consumer choice as a function of multiple consumption value dimensions and that these dimensions make varying contributions in different choice situations. These dimensions were social, emotional, epistemic and conditional value'.

Value dimensions are inter-related. Sweeney (2001:203) supports this view by quoting Osgood, Suci and Tannenbaum (1957) according to whom hedonic and utilitarian components of attitude may be related. At the same time, perceived value and satisfaction are different. Perceived value occurs at the various stages of the purchase including the pre-purchase stage. Satisfaction is a post-purchase evaluation of the product (Sweeney, 2001:203).

The study carried out by Sweeney (2001:203) establishes four distinct value dimensions, namely, emotional, social, quality/performance and price/value for money. This means that consumers assess products not merely on their functional terms, value for money and versatility; but also on the pleasure derived from the product and the social consequences it represents to others. The author further concludes that the various dimensions of consumer perceived value help to enforce retail performance.

While this section outlines value as perceived by the consumer, section 2.20 which follows explains the effects of value, quality and consumer satisfaction.

## 2.20 THE EFFECTS OF QUALITY, VALUE AND CUSTOMER SATISFACTION

Cronin, Brady and Hult (2000 :193) have expounded lengthily on the effect of quality, value and customer satisfaction on consumer behaviour. They refer to a variety of researchers and report both the convergent and divergent views on the issues. Consensus on the effects of quality, value and satisfaction is reflected in the quotations from Hallowell (1996), Fornell *et al* (1996), Athanassopoulos (2000), by the above-mentioned authors as reproduced below :-

- 'The service management literature argues that customer satisfaction is the result of a customer's perception of the value received .. where value equals perceived service quality relative to price ...' (Hallowell, 1996:29)
- 'The first determinant of overall customer satisfaction is perceived quality ... the second determinant of overall customer satisfaction is perceived value ..' (Fornell, Eugene, Jaesung & Barbara, 1996:9)
- 'Customer satisfaction is recognized as being highly associated with 'value' and .... is based, conceptually, on the amalgamation of service quality attributes with such attributes as price ...' (Athanassopoulos, 2000:192)

In other words, Cronin *et al* (2001:193) find a convergence of opinion in that 'favourable service quality perception lead to improved satisfaction and value attribution and that positive value directly influences satisfaction.' The authors rely on Bagozzi (1992) in support of their statement. They explain that in accordance with Bagozzi's model, the initial service evaluation and appraisal brings about an initial reaction that drives behaviour. This model suggests that satisfaction is preceded by more cognitively-oriented service quality and value evaluation.

Cronin *et al* (2001:193) also report that according to divergent literature on the issue, there is little uniformity concerning the effect of quality, value and satisfaction on consumer behaviour. In this context, the authors make mention of

three models. The first model which, inter-alia, refers to Wakefield and Barnes (1996) is based on the service value literature, where value is suggested to lead directly to favourable outcomes. The authors have relied on researchers like Ennew and Binks (1999) in quoting the second model based on the satisfaction literature. Contrary to the value literature, this model defines customer satisfaction as the primary and direct link to outcome measures. The third model comes from literature that investigates the relationships between service quality, satisfaction, and behavioural interactions. In this case, the authors refer to Zeithaml, Berry, and Parsuraman (1996). This third model adopts the perspective that the relationship between service quality and behavioural intentions is indirect.

In their study, Cronin *et al* (2001:193) have tried to assess the effects of quality, value and satisfaction on consumer behaviour. Their findings show that both service quality and cognitive evaluation precede emotional response. This finding indicates the importance of value as a strategic objective from managerial standpoint. Service quality perceptions are also an important determinant of consumer satisfaction. Cronin *et al* (2001:193) further conclude that service quality is an important decision-making criteria for service consumers. For them, the efforts to improve quality, value and satisfaction collectively for improving customer service perceptions stand justified. For the authors, quality not only affects perceptions of value and satisfaction; it also influences behavioural intentions directly. They further add that such influences may also be indirect.

Value as perceived by the consumer, quality of product and service, and consumer satisfaction are important elements in consumer behaviour. The thesis attempts at looking at these aspects with regard to domestic water consumers in Mauritius. However, satisfaction and tolerance form another facet of consumer behaviour. This aspect is explained in section 2.21 which follows.

## 2.21 CONSUMER BEHAVIOUR AND HYSTERESIS

In recent years a number of models have been put forward which take into consideration variables in the products or in the consumer's attitude to products which have an influence on the consumer's behaviour and repurchase behaviour. Some of these models identify variables which would influence consumer behaviour in only one direction, for example, satisfiers and dissatisfiers enunciated by Johnston (1995) as mentioned by Galloway (1999) in his article 'Hysteresis : a model of consumer behaviour'. Galloway(1999) adds that some other models assume that the effect of change in a variable would be reversible thus influencing consumer behaviour in both directions. Still some other models hold that certain threshold values have to be crossed before any effect would be apparent. This, Galloway records, is termed as the qualifying criteria of Hill (1985). However, there is also the belief that there are many circumstances in which the effect of change in a variable is not strictly reversible. This belief, according to Galloway, is supported by Kennedy and Thirkell (1988), who indicate that changes in variable values do not lead to a change in customer perception until the magnitude exceeds the zone of tolerance.

Galloway (1999) demonstrates that the models referred to above share a commonality with the physical science model of hysteresis which can be used to demonstrate various aspect of consumer behaviour. In the physical science, as the magnetic field strength increases, the magnetic flux also increases. However, a saturation point is reached beyond which further increases in the magnetising field strength have no effect. This characteristic of the hysteresis model also applies to consumer behaviour in certain respects. For instance, beyond a limit of tolerance, a product or brand ceases to attract a consumer.

### **2.21.1 Order-Winning and Qualifying Criteria**

According to Galloway (1999), the model developed by Hill aims at assisting manufacturing strategies. According to it, in any market, the value attached by customers to certain characteristics of a product or service package will be a function of the relative magnitude of that characteristic. This order-winning criterion can bring about competitive advantage. However, it has been recognised, according to Galloway (1999), that the degree of influence of an order – winning characteristic of a product or service upon a customer will vary from characteristic to characteristic, from market to market and with time.

Hill in his model also expounds on the qualifying criteria which the product or service must possess at a minimum level in order to enter or remain in a market, but which do not, with further improvement, stimulate sales. However, the order – winning criteria tend to become the qualifying criteria as competition intensifies.

Galloway (1999) explains that the general tendency is that characteristics which are recognised as important to competitive advantage will be developed to a point where further development is no longer economic or significant to the consumer. A saturation point is thus reached. Also, as the criteria performance is improved, the likelihood is that the rate of increase in satisfaction will decrease. Ultimately, a point is reached where the order-winning criteria becomes a disqualifying criterion. Variations within limits have no effect on consumer behaviour, but below a certain level, a rapid decay in attractiveness sets in.

### **2.21.2 Service Quality and Zone of Tolerance**

It is generally accepted that service quality is important for gaining and maintaining competitive advantage. This service quality as a qualifying or order-winning criterion is also expected to behave according to the hysteresis model.

The two aspects of the service quality which indicate a much stronger relationship are the zone of tolerance and satisfiers/dissatisfiers (Galloway, 1999).

Galloway (1999) makes reference to Berry and Parasuraman (1991) who find a zone of tolerance in terms of the actual service performance perceived by the consumer, and to Kennedy and Thirkell (1988) who view tolerance as a middle condition, which signifies satisfaction and which lies between dissatisfaction and delight. The same authors who refer to Johnston's (1995) view which suggests a zone of tolerance within the customer's expectation, while that of Liljander and Strandvik (1993) sees it as a form of inertia.

According to Galloway (1999), the concept developed by Hill (1985) suggests that as the hysteresis envelope narrows at the extremes, in the same way with the performance reaching saturation, the zone of tolerance becomes narrower, and in particular, underperformance will become less acceptable.

### **2.21.3 Satisfiers and Dissatisfiers**

Product characterised as an element generating satisfaction or dissatisfaction in consumers has been of interest to researchers. Swan and Coombs (1976) as reported by Galloway (1999) believe that consumers judge products on a limited set of attributes, some of which are relatively important in determining satisfaction, while others are not critical to consumer satisfaction but are related to dissatisfaction when their performance is unsatisfactory. In the hysteresis model, aspects of a product or service which are both satisfiers and dissatisfiers, are located round the zero point of attractiveness. Thus, if they decline, dissatisfaction is generated, and if they improve, satisfaction is generated. This, in general, would mean that particular elements of a product or service would move from being satisfiers at the early stage to being both satisfiers and dissatisfiers through the development stage and ending as dissatisfiers.

#### **2.21.4 The Hysteresis Model and the Product's life**

According to Galloway (1999), the hysteresis model implies that an order - winning criterion has a limited life. It is of interest in that it can predict the development and decay of an order - winning criterion. In the early stages of development of a criterion, the sensitivity of the market to the criterion is likely to be low. Inability to control the variable is likely to be non-critical, substantial improvement in performance will have little effect and the zone of tolerance will be wide. As a result of market awareness and competition, the order- winning criterion moves into the middle stage of its life cycle. At this stage, market sensitivity increases and the zone of tolerance decreases. In its final stage, the criterion becomes saturated and the zone of tolerance will be at or near zero. The obvious result is that as a criterion matures, the acceptable gap between the best and the worst performance will reduce, and the effort required to close the gap will increase. Those left behind would fail. Predicting the life of a product or service criterion, identifying its current position and the behaviour of consumers towards it are important inputs in strategy formulation.

Is the hysteresis model applicable to domestic water and to its consumers in Mauritius? This question is replied during the course of the research. It is worth noting that the supply of domestic water in Mauritius is not subject to any competition. The CWA is in a monopoly position. Water is vital to life. In that respect, water as a commodity has no limited life time nor can an order-winning criterion be assigned to it. The relevance of the hysteresis model is of interest to the supplier of water in Mauritius as it contains certain criteria which the supplier is required to consider the more so as it is a monopoly. These criteria are the satisfiers and dissatisfiers, quality of water, quality of service, level of customer care, customer satisfaction/dissatisfaction and customer confidence in the water supply and service.

Fierce competitiveness characterises business across the world and quality is one of the winning criterion which allows businesses to gain competitive edges. This aspect is dealt with in next section 2.22.

## **2.22 QUALITY OF SERVICE AND CUSTOMER SATISFACTION**

In the 1980's, Managerial concern for efficiency through cost reduction gave way to the importance of customer satisfaction and quality of service. This aspect is highlighted by W. Edward Deming (Scherkenbach, 1991). The idea put forward by Deming is that it will not suffice to have customers that are merely satisfied. Satisfied customers switch, for no good reason, just to try something else. Profit and growth come from customers that can boast about your product or service – the loyal customer. He requires no advertising or other persuasion, and he brings a friend along with him. Loyal customers will pay more for quality, and refer new prospects to your business.

Other Scholars like Wellington (1995), Lovelock (1996), Reilly (1996) have equally focussed on customer service while propounding on customer satisfaction.

Customer service emphasizes on quality of service. Zeithaml, Parasuraman and Berry (1990) indentified five factors used by consumers to evaluate quality of service. These are:-

Tangibles	-	appearance of physical elements
Reliability	-	dependability, accurate performance
Responsiveness	-	promptness, helpfulness
Assurance	-	competence, courtesy, credibility, security
Empathy	-	easy access, good communications, customer understanding

The Kaizen movement which started in Japan is regarded as the first holistic movement in business (Wellington, 1995). The Kaizen companies left



aside the traditional style of business management and culture, and adopted a system of continual improvement. The Kaizen strategies for customer care identifies six 'satisfaction elements' which deserve mention. These are shown in table 2.1 which follows.

**Table 2.1 - Satisfaction Elements and Component Factors**

<b>Satisfaction Elements</b>	<b>Component Factors</b>
Product Element	Availability, quality, presentation, image, value for money, fulfillment of expectations.
Sales Element	Honest, legal, non-intrusive and non-manipulative marketing, welcoming and non-threatening environment; non-dismissive, responsive, emphatic, trustworthy and knowledgeable staff, plain and precise documentation
After-Sale Element	Maintained interest: acknowledging and honoring a customer's lifetime value. Complaint handling: empowered staff responding immediately, courteously, honestly, sympathetically and thoroughly.
Location Element	1. Explaining the location precisely, showing access routes; providing adequate lighting, cover and signage to car parks and entranceways. 2. Ensuring physical space serves the needs of the dynamics of human interaction. Provision for customers with special needs.
Time Element	3. Business hours according to customer needs. 4. Speed of transaction should be as short as customers want it.
Culture Element	5. Ethical company. 6. Internal relationships demonstrate fair and equitable treatment of all employees. 7. Conduct: being unprejudiced, objective, honest and authentically customer focussed.

**Source : Wellington (1995)**

Devlin and Dong (1994) conclude that success of the service experience does not depend only on the timeliness and effectiveness of the service but also on customer-employee interaction. Seeking the customer's voice to measure service quality is therefore critical. They identified five quality dimensions:-

- Competence : Knowledge and skills
- Service Liability: Bringing solution in the first attempt

Empathy	:	Care and personal attention
Courtesy	:	Friendly and helpful
Communication:		Giving clear information

Monitoring quality process over time is important. In that respect, Devlin and Dong (1994) have proposed a five-phase process as below:-

- Identify and prioritise areas of service quality critical to customers
- Measure and understand customers' needs and expectations of service quality and the extent to which these are met
- Compare service quality performance with that of competitors
- Anticipate customer needs.

Quality of service is seen in relation to the customers' satisfaction, which satisfaction depends on their expectations. Thus, according to Lovelock (1996), if the customers' satisfaction is low, a slightly better service would be considered as a good quality service. A quality customer service requires continuously evaluating the customers' expectations and satisfaction, and closing the gap, if any. According to Parasuraman, Zeithaml and Berry (1988), weaknesses leading to gaps between the customers' expectation and their satisfaction are:-

- Ignorance of what the customer expects
- Specifying quality standards that do not reflect the customers' expectations
- Service performance that does not match specifications
- Not to the levels of service performance promoted by the organisation.

The authors find it imperative that the causes of each gap should be identified and strategies developed to close each of them in order to improve the quality of service.

Each organisation has its own particularities so that each should develop its own customised approach to achieve its quality objectives. This view emanates from Lovelock (1996) who further observes that organisations which are renown for their excellent service are those which are good at listening to their customers as well as to their front line employees.

### **2.22.1 Total Quality service**

Total Quality Management (TQM), Total Quality Improvement (TQI), Total Quality Service (TQS) are among the various methods that emerged in recent years to describe the processes of total quality. For Total Quality, the customers are vital to the organisation and its primary aim should be to keep its customers satisfied by providing them a quality product and service. Timm (1997:141) reports that Karl Albrecht built upon the TQM philosophy to put forward the TQS model which calls for continuous improvement of the customer service. TQS depends on everyone in the organisation. It requires the first employee whom a customer approaches to be able to take all necessary actions to satisfy him.

### **2.22.2 The Service and the Customer Encounters**

Lovelock (1996) takes up the view of Bitner (1993) in that research in the field of service encounter or moments of truth is a necessary means towards a quality customer service and highlights the importance of the moments of truth. The idea is further developed by Lovelock (1996). The underlying assumption of this view is that customer perceptions of service encounters are important elements of customer satisfaction, perception of quality and long-term loyalty. The service encounters focus on the interaction between customers and employees. The undermentioned areas of service encounter indicate their relevance to a quality customer service:-

- The understanding of customer and employee interactions in service encounters to evaluate how the customers perceive

the individual service encounter.

- The customer involvement in service encounters and his role in service production and delivery.
- The role of tangibles and physical environment in the customer's evaluation of the service encounters.

### **2.22.3 Service Quality and The System**

According to Eiglier and Langeard (1996), the service business is a system which comprises the service operations and the service delivery. In the 'Service Operations', inputs are processed and the elements of the service product created. This part is the 'technical core' or the 'backstage' and is normally not visible to the customer. In the 'service delivery', the final 'assembly' of the elements takes place and the product is delivered to the customer. The physical support and the contact personnel form part of this component and may entail exposure to other customers. In this context, service quality has three dimensions, and Eiglier and Langeard (1996) suggest that service has to be measured against each of these three dimensions, namely:-

(i) Quality of the Output:

The overall quality of the service itself is vital in order to satisfy the customer's expectation. Hence knowledge of the customer expectation must be known in order to satisfy him.

(ii) Quality of the Elements of the 'Service delivery Sub-system':

The intrinsic quality of each of the elements constituting the 'service delivery', for example, physical support, contact personnel, as well as the degree of coherence among them.

(iii) Quality of the Process:

The set of interactions between the various elements that are necessary to provide the service. This aspect is

characterised by the fluidity and ease of the interactions, the sequence in which they occur and the efficiency in which the expected service level is matched.

Eiglier and Langeard (1996) emphasise the importance of the contact personnel in providing a high service quality, their conflicting situation in safeguarding the interests of both the customer and the organisation and their multi-dimensional role. Service quality according to them rests heavily on the contact personnel.

#### **2.22.4 Internal Service Quality And The System**

Gronroos (1981) and Lovelock (1996) have in their studies laid emphasis on internal marketing and internal service quality for customer satisfaction. The concept of internal marketing rests basically on two factors:

- (i) Every one in the organisation has a customer whom he must serve and satisfy. It is not just the contact personnel who need to satisfy customers;
- (ii) Internal customers have to be sold in the service and be satisfied in their jobs before they can serve effectively and keep the final customers satisfied (Gronroos, 1981).

Internal service quality makes the largest contribution towards employee satisfaction. What employees value most are the ability and authority to achieve results for customers. This aspect is developed by Wellington (1995) in 'Kaizen Strategies for Customer Care' wherein he proposes the employee enablement equation 'Communication + Training + Motivation = Enabled Performance' for quality service, customer satisfaction and ultimately for organisational success.

In trying to study the behaviour of domestic water consumers in Mauritius, the research also tries to look into the quality of the commodity and of the service

related to its distribution. One obvious reality is that where quality and customer satisfaction do not exist, consumer complaints are likely to follow. This aspect is the subject matter of section 2.23 which follows.

## **2.23 CONSUMER COMPLAINTS**

Consumer complaints are the direct results of consumer dissatisfaction. In marketing, such complaints are useful information that helps identify sources of dissatisfaction and should therefore be encouraged. Kasouf, Celuch and Strieter (1995) have argued that consumer complaints are very useful forms of consumer-initiated information that can assist in making strategic and tactical decisions. Appropriate responses to complaints can prevent customers from switching, Kasouf *et al* (1995) quote Fornell and Wernerfelt (1987), Plymire (1991) and observed that the surest way to a customer focussed culture is through increased complaints.

One of the benefits of complaints is that it gives dissatisfied consumers the chance to vent their unhappiness. This view is reproduced by Kasouf *et al* (1995) from Kowalski (1996), and from Kolodinsky and Aleong, (1990). The authors further refer to Allicke, Braun, Glor, Klotz, Magee, Sederholm and Siegel (1992) who found that the most common reason for complaining in social interaction was to vent negative emotions.

The question that arises is whether complaining has any direct benefits, whether it increases satisfaction and reduces dissatisfaction. Kasouf *et al* (1995) refer to scholars like Oliver (1987), Kowalski (1996) and Nyer (1999) for the reply. Oliver suggested that complaining reduces dissonance caused by dissatisfaction. Kowalski *et al* (1996) found that low propensity complainers felt better after they had expressed their dissatisfaction. Nyer (1999) too found that subjects who complained experienced lower levels of dissatisfaction. Highly dissatisfied consumers are more likely to engage in intense complaints, and consumers who

complain intensely are more likely to experience a decrease in dissatisfaction (Nyer 1999).

According to Alicke *et al* (1992) as reported by Kasouf *et al* (1995), complaints, especially negative word of mouth, are motivated by the desire to get emotional release. Emotional release may be aimed at seeking redress or warning potential consumers (Day 1980). Kasouf *et al* (1995) have reported the view of Nyer (1999), who found that encouraging consumers to express their dissatisfaction may cause increase in satisfaction. The benefits of encouraging complaints are most obvious for customers who are most dissatisfied and to a lesser extent for those who are moderately dissatisfied. The more intensely a consumer complains, the greater are the increases in satisfaction. Finally, Nyer (1999) established that complaining not only increases satisfaction but also influences actual purchasing behaviour.

Complaining can be good both for the customer and for the marketer. Dealing effectively with customers' complaints is vital for the survival of the business. It results in satisfied and even enthusiastic customers.

It is within the context of this thesis to dwell on the ethics which are likely to guide consumer behaviour. Consequently, next section 2.24 reviews consumer ethics.

## **2.24 CONSUMER ETHICS AND CONSUMER BEHAVIOUR**

This section is included in the literature review as the thesis also deals with illegal use of water in chapter 6 for the development of the new model. Consumer ethics and consumer behaviour are so closely related that one cannot be dissociated from the other when probing into the consumer's behaviour. The last decade has seen a marked increase in the concern for ethical issues in business. Literature on ethical issues in the market place specially from the consumer's

perspective is still very sparse. This view is expressed by Al Khatib, Vittel and Rawwas (1997).

#### **2.24.1 Types of Studies Carried Out**

According to Al Khatib *et al* (1997), the little that has been written on consumer ethics can be put into four broad categories. The first concerns empirical studies on specific behaviours that have ethical implications. The two first common areas are shoplifting and ecologically related consumption. The second group focused on providing normative guidelines for consumers and businesses on ethically related issues. The third group focussed on providing a conceptual basis for understanding ethical decision-making by consumers. It further tries to explain how some people may justify non-normative consumer behaviour. The fourth group has empirically attempted to understand the ethical decision-making of consumers.

#### **2.24.2 A Few Research Findings**

As referred to by Al Khatib *et al* (1997), Davis (1979) investigated the extent to which people were willing to discharge their responsibilities according to their rights as consumers. The authors concluded that more subjects were likely to insist on their rights as consumers than those who were willing to accept their corresponding responsibilities.

According to Al Khatib *et al* (1997), De Paulo (1987) looked into the students' perceptions about how wrong they believed certain behaviour to be. Situations presented included those on buyers misleading sellers and sellers misleading buyers in negotiations. The results were consistent according to the authors with those of Davis (1979) in that consumers were more critical of sellers than they were of buyers who engaged in the same behaviour.



Wilkes (1979), as reported by Al Khatib *et al* (1997), in his study about consumers' judgement on how wrong certain activities were, found that although some activities were disapproved of more than others, most of these activities were seen as being wrong. Shoplifting serves as a good example. Shoplifting by itself is an illegal act. However, consumers would condemn this act to varying degrees according to their own perceptions. However, consumers seemed to perceive a few of these activities as tolerable. These points of tolerance seemed to relate to those activities where the business was at fault rather than the consumer. One example where the business could be considered to be at fault by the consumer is when the latter is being overcharged for his purchases.

### **2.24.3 Moral philosophies**

Al Khatib *et al* (1997) rely on Hunt and Vitell (1992) and argue that according to modern business ethics theories, different individuals will apply ethical guidelines or rules based on different moral philosophies when faced with decision-making situations having to do with ethics. The moral philosophies are generally categorised in two major types, namely, deontological and teleological. According to Hunt and Vitell (1992), deontological theories focus on the specific behaviour of an individual, whereas teleological theories focus on the consequences of the actions or behaviour.

The deontological evaluation is the process whereby one evaluates the inherent rightness or wrongness of an evoked set of alternatives that one views as possible courses of actions. This evaluation process involves comparing possible behaviour with a set of predetermined deontological norms or predetermined guidelines that represent personal values or rules of behaviour (Hunt and Vitell 1992).

As regards the teleological evaluation process, individuals evaluate possible behaviour by considering:-

- (i) the perceived consequences of each alternative for various stakeholder groups;
- (ii) the probability that each consequence will occur to each stakeholder group;
- (iii) the desirability or undesirability of each consequence;
- (iv) the importance of each stakeholder group (Hunt and Vitell, 1986).

According to Hunt and Vitell (1992), consumers in their ethical decision-making process carry out both deontological and teleological evaluations.

#### **2.24.4 Personal Characteristics**

Machiavellianism is but one of the unethical consumer characteristics. According to Hunt and Chonko (1984), as reproduced by Al Khatib *et al* (1997), the label of Machiavellianism is becoming a negative epithet indicating an amoral (if not immoral) way of manipulating items to accomplish one's objectives. The authors also quote Christie and Geis (1970) who observed in their study that Machiavellian persons possess a kind of cool detachment that makes them less emotionally involved with others or with saving face in potentially embarrassing situations. This absence of involvement with others, perhaps, leads the more Machiavellian individual to accept less ethical consumer practices.

The deontological/teleological paradigm is parallel to the two dimensional personal moral concept of idealism/relativism developed by Forsyth (1980) and referred to by Al Khatib *et al* (1997). Relativism is conceptualised as the degree to which an individual rejects universal moral rules when making ethical judgements or drawing conclusions about moral questions. This is essentially a teleological perspective. Idealism is viewed by Forsyth (1980) as the degree to which the individuals assume that desirable consequences can, with the right action, always be obtained. Idealistic individuals adhere to moral absolutes when

making moral judgements. This can be situated within a deontological perspective.

Al Khatib *et al* (1997) explain that based on the idealism/relativism dichotomy, Forsyth (1980) classified people into four different ethical types, namely, situationists, absolutists, subjectivists and exceptionists. Situationists reject moral rules while evaluating whether their actions yield the best positive outcomes given the situation. Such individuals use deception to achieve the best possible outcome in a situation. They thus follow a teleological perspective. Absolutists are strictly deontologists. They believe that their actions are moral only if they yield positive results through conformity to moral absolutes. For them deception is always wrong as it violates fundamental moral principles. Subjectivists are those who reject moral rules and base their moral judgement on personal feelings about their actions. They believe that deception is a personal matter to be decided on by the individual. They are thus viewed as teleologists. Exceptionists who believe that if deception cannot be avoided, then it is allowable as long as safeguards are used. Al Khatib *et al* (1997) conclude that the idealism /relativism typology is based on a combination of two scales. Idealism is the overall acceptance of moral absolutes while relativism is the rejection of universal moral principles. This typology relates to a consumer's ethical beliefs since absolutists have the most rigid ethical belief systems, while subjectivists have the most flexible ones. Situationists and exceptionists are between these two extremes in terms of their ethical beliefs.

Consumer ethics at the same time bring to mind the possibilities of illicit trade that may exist in any society. Thus a review of the purchase of illicit goods is undertaken in next section.

## **2.25 CONSUMER BEHAVIOUR AND PURCHASE OF ILLICIT GOODS**

Trade in illegal goods is a flourishing business. Its continued existence is evidence of consumer's demand in line with the economic theory which suggests that if there is little or no demand for a product, supply will decrease as well.

Miller (1999) argues that illicit goods are illegal goods freely chosen by the consumer while an illicit purchase is one where the product sold and purchased was offered illegally, being illegally produced or illegally obtained. The aberrant or criminal behaviour, including consuming is often motivated or abetted by certain characteristics or situational factors. Price, penalty and situations appear to be related to the decision to willingly participate in criminal behaviour.

Scholars have stressed price as the main motive for consumer misbehaviour. Miller (1999) notes that Dillon (1989) associated price pressure with illicit behaviour, Dodget, Edwards and Fullerton (1996) reported that economic consequences influenced the tolerance of questionable consumer behaviour, Wee, Tan and Cheok (1995) viewed price as the main motive for the purchase of counterfeit goods; while for Bloch, Bush and Campbell (1993), a consumer will buy a counterfeit product in lieu of a genuine one only if there is a price advantage.

Basing himself on Grossman and Shapiro (1988) and on Ehrlich (1986), Miller opines that stolen and counterfeit goods represent cost/benefit advantage to the consumer. Stolen goods are quality products resulting in substantial cost saving, while counterfeits, although of inferior quality, are prestigious and purchased at a good price.

Even if price advantage motivates consumer misbehaviour, the fear of criminal penalty serves as a deterrent. Miller (1999) reports Grasmick and Bryjack (1989) who found that the degree of punishment and criminal conduct were

inversely related. The same author refers to Feldman's (1977) view that the lower the risk of detection, the more likely a person is to deviate, while that of Pitts, Wong and Whaen (1991) established a relationship between unethical behaviour and personal consequences.

Miller (1999) refers to Walker (1977) who found the people who get satisfaction out of the performance of deviant acts and who want to rebel against the system. In this context, the fear of criminal punishment does not serve as a deterrent to criminal behaviour.

Situational factors may affect illicit behaviour in consumers. According to Rindfleisch, Burroughs and Denton (1997), as stated by Miller (1999), situational influences affect the decision to engage in unethical consuming behaviour. For Walker (1977), social pressure can lead people either to follow rules or to break rules. The social pressure can be either to join others engaging in illicit behaviour or to avoid the illicit behaviour because others are not participating. Hayner's view (1929), as reported by Miller (1999), is that a person is more likely to act by impulses than by ideals of peers when he is alone and free from restraints; while Gelleman (1986) found that people are more likely to engage in misbehaviour when they think their acts will not be found and publicised. Miller adds that Bearden, Rose and Teel (1994) have reported peer pressure to conform as a factor leading to inappropriate consumer behaviour. On the other hand, peer rejection of misbehaviour may serve as a deterrent to such misbehaviour. Hollinger and Clark (1987) view that social controls may be an even better deterrent to illicit behaviour than physical controls (Miller 1999).

Miller (1999) reports the views of Strutton, Pelton and Ferrell (1997) that the decision to participate in aberrant acts is complicated by the ability of the individual to rationalise his behaviour; while Feldman (1977) suggested that virtually anyone might commit an illegal act in the event of the right combination of reward and cost. Miller (1999) also refers to Cox, Cox and Moschis (1990) who

expressed similar view in that basically honest individuals act dishonestly when faced with temptation, perceived low risk of punishment, and the ability to rationalise their behaviour. The authors further add Gellerman's (1986) view that one way in which people rationalise their behaviour is by concluding that it is not really illegal or immoral.

Miller (1999) has evaluated the variables which are most important in the decision to purchase illicit goods using product type, buying situation, perceived criminal risk and price as predictor measures. His survey showed that the main effects of product type, buying situation and price were significant predictors of willingness to buy illicit goods. Also the interaction of risk with product type and of price with product type were significant predictors.

According to Miller (1999), people are most likely to engage in illicit behaviour in the event of peer pressure to do so. They are less likely to purchase illegal goods if they are alone with someone not engaging in illicit behaviour.

In his survey, Miller (1999), found that some respondents appeared to be able to rationalise their illicit purchase decision. Some treated counterfeit and generic goods indiscriminately. Some were strongly willing to purchase stolen products. Those not inclined to engage in illicit behaviour were discouraged by the level of perceived risk. On the other hand, those inclined towards illicit behaviour became less inclined as the fear of criminal reprisals increased.

Illicit trade and illicit consumer behaviour are harmful to the business world and society at large. The satisfaction of consumers in its entire rationality and the maintenance of law and order require the strict enforcement of criminal sanctions against both consumers and the merchants of illegal goods.

Consumer ethics and purchase of illicit goods reviewed in the previous section and in this section respectively are very much relevant to the thesis. The

research also tries to establish whether unethical consumer behaviour and illegal use of domestic water exists in Mauritius.

## **2.26 CONCLUSION**

This chapter is devoted to the literature review of the foundations of consumer behaviour; while the next chapter makes a literature review of the models of consumer behaviour. These two chapters constitute the foundation of the research.

The literature review in this chapter outlines the evolution of consumer behaviour from its early years when Venetian traders undertook surveys on consumer preferences around the Mediterranean sea. Later on, economics developed as a subject which served as a basis for consumer behaviour. Besides economics, consumer behaviour also evolved on the behavioural sciences like psychology, sociology, anthropology and social psychology and emerged as a discipline in its own right.

The review further covers the psychological factors influencing consumer behaviour, such as, personality and self-concept and includes the socio-psychological theories which serve to proceed with the research. The individual determinants include motivation, information processing, perception, beliefs and attitude. While considering consumer attitudes, the tricomponent attitude model which contains the cognitive component, the affective component and the conative component has been reviewed. Moreover, human attitudes including reciprocity, scarcity, authority, consistency, liking and consensus have been discussed.

The social factors are important elements which determine consumer behaviour. These factors have been duly taken into consideration while researching on the behaviour of domestic water consumers in Mauritius. The

social factors include the social and situational influences, culture and sub-culture, social class and reference groups, family and lifestyle.

The research attempts, inter-alia, at establishing the decision-making process of domestic water consumers in Mauritius. In this context, the consumer decision-making process and types of decision-making have been literature reviewed. The decision-making process includes problem recognition, information search, evaluation of alternatives, purchase and the post purchase decisions.

Some of the findings by different researchers have been included in the literature review. These findings are related to consumer behaviour which is the subject of this thesis with respect to domestic water in Mauritius. These findings, among others, refer to uniformity and consistency in consumer behaviour, value as perceived by customers, quality of product and service, consumer complaints and consumer satisfaction. Finally, this chapter literature reviews findings on consumer ethics and purchase of illegal goods. These two areas are equally covered while carrying out this research in the context of domestic water in Mauritius.

Chapter 3 is devoted to the models of consumer behaviour. It includes the presentation of an integrated model of consumer behaviour against which the model which is developed in chapter 6 is analysed and discussed.



# **CHAPTER 3**

## **LITERATURE REVIEW II**

### **MODELS OF CONSUMER BEHAVIOUR**

#### **3.1 INTRODUCTION**

This chapter is a follow up of the literature review in chapter 2. It is devoted to the presentation of the grand models of consumer behaviour. These models are the Nicosia model, the Howard and Sheth model, the Engel-Blackwell model and the Engel-Blackwell-Miniard model. These models have been compared in section 3.3 (p. 130). In this thesis, these models serve more than one purpose. In the first instance, they are used to explain consumer behaviour. They further serve to understand the behaviour of domestic water consumers in Mauritius. Finally, the common aspects of these models have been used to construct an integrated model of consumer behaviour which serves as a framework against which the consumer behaviour model that has been developed during the course of this study is analysed and discussed.

#### **3.2 MODELS IN CONSUMER BEHAVIOUR**

Theories and models have, through the years, been developed as convenient means of understanding consumer behaviour. Du Plessis (1991:17) refers to Walters (1978) who defines models of buying behaviour as 'anything used to represent all or part of the variables of buying behaviour', and to Engel *et al*, (1986) for whom a model is a 'replica of the phenomenon it is designed to represent'. Foxall (1991:181) describes a model of consumer choice process 'as any set of statements which identify and relate the concepts and constructs in terms of which consumer behaviour may be described and, more importantly, explained and predicted'. Formal models have several advantages for consumer research. For instance, models are able to draw together, integrate and interrelate research results that have been collected in a variety of contexts and

of which the separate explanatory power is limited. Models of consumer behaviour can assist in forecasting consumer demand and in predicting buying decisions of specific segments of the market. Finally, the use of models has pedagogical advantages as it allows knowledge to be structured and explanations simplified (Foxall, 1991:182).

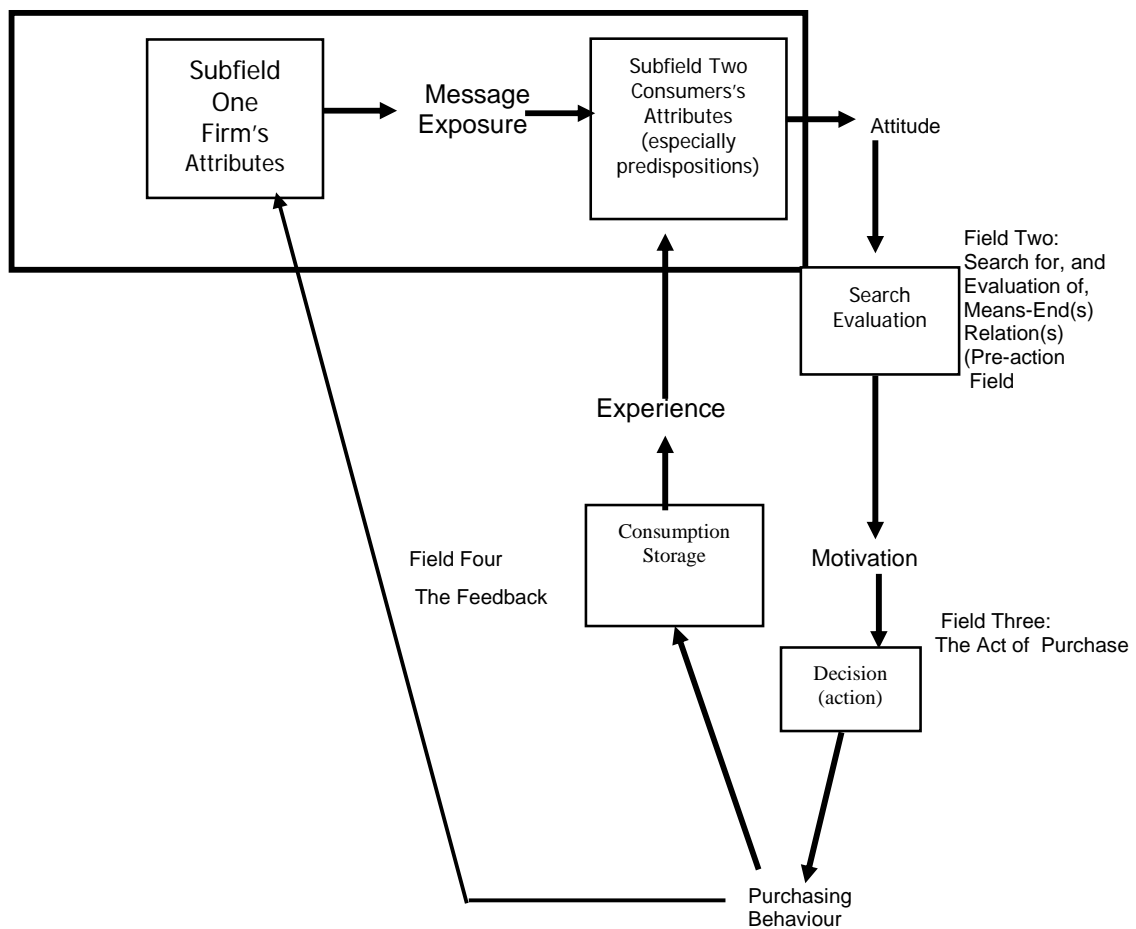
### **3.2.1 The Nicosia Model**

The model of consumer behaviour (Du Plessis, 1991:19, 20) depicted in fig. 3.1 which is reproduced at the end of this section (p. 118) was developed by Nicosia in 1966. The model starts with the introduction of a product into the market by an organisation. It makes use of various variables and their interdependence to explain buying behaviour. It consists of various components of which buying is only one part of a continual decision-making process. The organisation's decision-making process, the consumer feedback, the cognitive and the psychological attributes form an integral part of the model. (Du Plessis, 1991:19). According to Schiffman and Kanuk (1996:64), this model focuses on the relationship between the consumer and the firm. The model makes use of messages such as advertising to communicate with consumers, who in turn, communicate with the firm by their purchases. The authors observe that 'the Nicosia model is interactive in design: the firm tries to influence consumers, and the consumers - by their actions (or inactions) - influence the firm.'

The Nicosia (1966) model can be divided into four stages. Du Plessis (1991:19) explains that the first stage involves the firm's input stimuli in communicating with potential consumer's. The consumer's 'attributes, together with the consumer's predispositions, are processed to form an attitude'. In case the consumer's attitude towards the product and message is positive, he undertakes an evaluation of the product and possible alternatives in stage two. Factors which are relevant in this stage include buying experience, product attributes, communication with others and the consumer's personal situation. In stage three the consumer is motivated to buy although constraints like availability

might affect his action. Stage four is the feedback which involves the consumption of the product, information flow towards the firm, consumer experience of the product and the possible influence on his future buying behaviour. In this model, new motivations through consumption may influence the processes in stage three; while new attitudes or reinforcement of existing attitudes may influence future experiences in stage two. At the same time, new predispositions may develop which may modify future activities in Stage one (Du Plessis, 1991:19). An appreciation of this model follows in section 3.3 (p.130).

**Fig. 3.1 - THE NICOSIA MODEL OF CONSUMER DECISION PROCESS**



**Source : Nicosia (1966 : 153 - 191)**

### **3.2.2 The Howard and Sheth Model**

The consumer behaviour model developed by Howard and Sheth (1969:31) is depicted in figure 3.2 (p. 122). This model is explained in detail by Du Plessis (1991:21-24). According to Du Plessis, Howard and Sheth view industrial buyers and consumers as virtually identical. They, therefore, prefer the term purchasing behaviour to consumer behaviour. The model is based on the stimulus-response theory. It shows the route by which stimuli provoke decision-making and how repeated decisions and choices by the buyer lead to increased knowledge and experience. The model identifies three stages in buying-behaviour, namely, 'extended problem solving behaviour, limited problem solving behaviour and routinised response behaviour'.

Du Plessis (1991:21-24) refers to the model and explains that consumers adopt the extended problem-solving behaviour in their decision-making process 'when they have few fixed criteria for evaluating product categories'. In fact, they require more information 'to develop a set of criteria for product evaluation'. One example is the purchase of a computer. The limited problem-solving behaviour occurs when the consumer has already developed 'basic criteria for evaluating a product'. 'Search for additional information takes place in order to develop preferences among different brands'. Coffee can be quoted as an example in respect of which the consumer often adopts the limited problem-solving behaviour. In the routinised response behaviour, 'the consumer has experience of the product and makes use of well developed criteria' for evaluating products. The consumer undertakes little or no search for additional information. The purchase of rice in the local context serves as a good example as it is a product of daily consumption by the local population.

The model contains four major elements, namely, inputs, perceptual constructs, learning constructs and outputs (Rice, 1995:305). The input variables consist of three distinct stimuli or information sources. These are in the form of significant stimuli, that is, the physical product characteristics, symbolic stimuli,

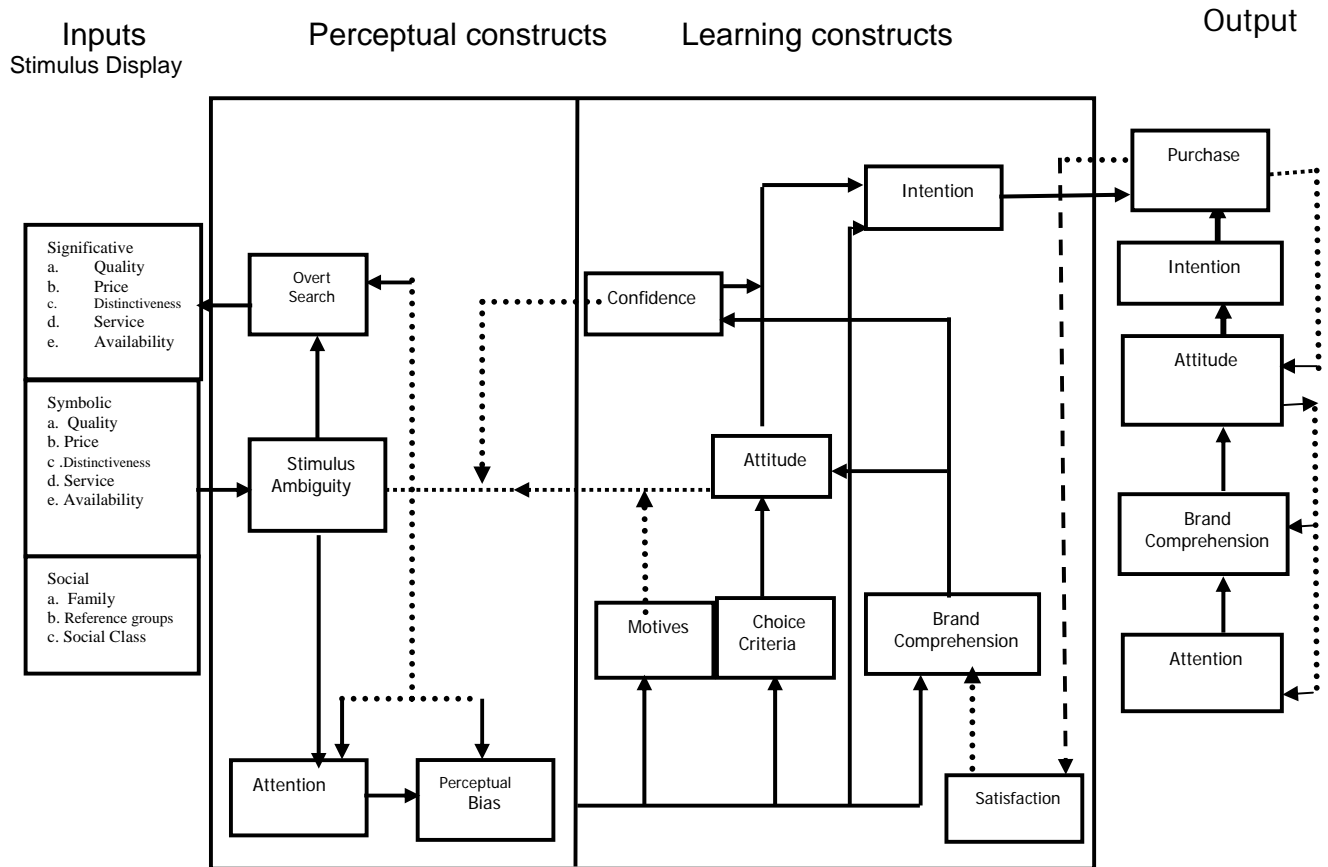
that is, linguistic or illustrated representations, and social stimuli, that is, information of the social environment. The output variables in the model consist all the buyer's responses which start with his attention to a stimulus and ends with the actual purchase. The dotted lines in the model (fig. 3.2 p.122) represent feedback which influences attitudes. This, in turn, may affect attention and brand comprehension.

The perceptual constructs form the central part of this model. Rice (1995:305) explains that the perceptual variable deals with the way a consumer receives and processes information from the input stimuli and from the other stages of the model. The perceptual constructs contain four elements, namely, stimulus ambiguity, overt search, attention and perceptual bias. Stimulus ambiguity suggests that the consumer may be unclear about messages being received. He may strive to resolve uncertainty through overt search. Implicit in this activity is attention in the sense of concentration on the material to hand and the whole process is evidently subject to perceptual bias as a result of distortions.

Howard and Sheth (1969) attempt to identify the learning processes which are concerned directly with the product. These are motivation, criteria for choice, brand comprehension, attitude, confidence, intention, purchase and satisfaction (Rice 1994:304-307). The 'motivation' to satisfy a perceived need influences the 'criteria for choice'. These criteria may vary from extensive to routinised problem solving behaviour. 'Brand comprehension' is related to the overall perception of a product which will have been influenced positively by marketing messages, which in turn influence 'attitude' towards a product. 'Confidence' is another important element in the decision-making process. The altitude about and the evaluation of a product determine the level of confidence about the capacity of that product to satisfy a perceived need. Attitude and confidence lead to 'intention' to 'purchase' which may materialise in the act of 'purchase'. 'Satisfaction' is presented in the final stages of the model which concern the post-purchase behaviour of the consumer. Satisfaction serves as feedback to the consumer's perception of the brand (Rice, 1995:306). According to Du Plessis (1991:23), the learning and

perceptual constructs are hypothetical constructs and not directly obvious. Like the perceptual construct, the learning construct consists of psychological variables. For example, perceptual bias in the perceptual construct and motive in the learning construct are psychological in nature. Both constructs are important for output realisation.

**Fig : 3.2 - HOWARD – SHETH MODEL OF CONSUMER BEHAVIOUR**  
*(Dotted lines indicate feedback)*



Source: Howard -Sheth (1969 :31)

### 3.2.3 The Engel- Blackwell Model

Du Plessis (1991:25) reports that Engel, Kollat and Blackwell revised their 1968 original model in 1973 and, again, in 1978. This model was refined by Engel and Blackwell in 1982. Du Plessis reports that this 1982 revision differs

from that of 1978 in that it makes a distinction between high and low involvement behaviour. The Engel - Blackwell model (1982) is depicted in figure 3.3 (p.125).

In the Engel-Blackwell model (1982), the degree of involvement is important in the decision-making process. Du Plessis (1991:25) refers to Engel - Blackwell (1982) and explains that in low involvement decision-making, there is lack of high personal relevance, low perceived risk, minimal effect on consumer's self-image and little anxiety as regards the outcome of a purchase. Decisions are made on existing information on products. The need for additional information and its search and evaluation are minimal. For example, the purchase of a prescribed book for the child may require a low involvement in decision-making. In high involvement which leads to extended problem-solving, consumers 'deliberately search for new information and evaluate product alternatives with caution' (Du Plessis, 1991:25). The purchase of a computer may be quoted as requiring high involvement. The decision-making process involves problem awareness, information search, alternative evaluation which may lead to change in opinions, attitudes and intentions before the actual purchase.

The decision-making process according to the Engel-Blackwell model (1982) consists of five components, namely, 'the input stimuli, information processing, decision-making process, decision-making process variables, and outside influences'. The decision-making process, which is 'the essence of the model', goes through five stages. These are 'problem awareness, information search, alternative evaluation, choice and the purchase results' (Du Plessis 1991: 22).

Du Plessis (1991:27) explains that problem awareness occurs in the first stage of the decision-making process in the model when the consumer becomes aware of a difference between his present state and his ideal state. This awareness may be created by internal motives or external stimuli. Any desired action emanating from the problem awareness leads to information search which is the second stage. The consumer may make use of information stored in his

memory or of his experiences which take the form of ideas and attitudes which influence his preferences. The consumer may also make use of stimuli, that is, market dominated sources of information.

In the third stage, the consumer stores the acquired information in his 'short-term memory for further processing in the evaluation of alternatives'. In the alternative evaluation stage, the consumer compares the acquired information with the product standards or evaluation criteria. The strengthening or weakening of existing evaluation criteria in the long-term memory by information gathered leads to acceptance or yielding of the product. Acceptance/yield information gets stored in the permanent memory; while lack of acceptance/yield results deletes related information from the memory (Du Plessis, 1991: 27,28).

Du Plessis (1991:28) notes from Engel-Blackwell (1982) that a strong positive intention or acceptance of an alternative leads to the choice of the product in stage four. In the absence of any constraint, the purchase takes place. The result of the purchase is seen in stage five. The consumer may experience satisfaction of a need from the use of the product, in which case his evaluation criteria are consolidated. In case of dissatisfaction, a reconsideration of such criteria takes place. Another post-purchase result could be dissonance, which refers to post-purchase doubt as regards a product. Dissonance may lead to further information search with a view to justifying the choice of a product after its purchase.

The Engel-Blackwell (1982) model includes various external factors which influence the decision-making process. Among these factors are the cultural norms and values which 'definitely influence the consumer's value judgement of a product' (Du Plessis, 1991:29). At the same time, social groups, reference groups and family members may influence the decision-making process and the purchase intention.

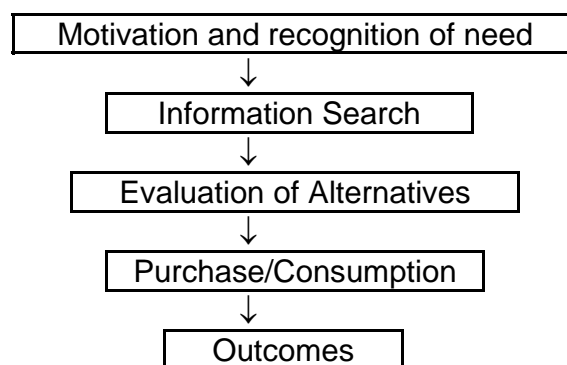
The Engel-Blackwell (1982) model depicts a series of activities which a consumer undertakes in situations of high involvement. The decision-making





According to Rice (1995:295), Engel-Blackwell-Miniard model 'is a development of the classic Engel, Kollat and Blackwell model first introduced in 1968 and updated and modified in the 1990 edition of their text'. Du Plessis (1991:29) notes that 'the characteristics of high and low involvement in consumer decision-making was pointed out'. He refers to Engel, Blackwell and Miniard (1986) who in this context state 'that some decisions by consumers are characterised by fully active reasoning as in the case of extended problem solving. In other cases the consumer is more passive in the decision-making process'. This model is depicted at the end of this section in figure 3.4 (p.129).

The Engel-Blackwell-Miniard (1986) model, like the Nicosia, the Howard and Sheth and the Engel and Blackwell models, is considered as one of the grand models of consumer behaviour (Rice, 1995:295). The model adopts the purchasing process as a decision-making and purchasing exercise. The consumer is viewed as having a problem which is solved by the purchase of a product that suits his purpose. In simple terms, the Engel-Blackwell-Miniard (1986) model can be said to adopt the following sequence of problem solving and decision-making (Rice,1995:296) :-



The sequence of the processes is explained by Rice (1995). Motivation and need recognition occur in the consumer when the consumer is faced with a problem. A problem is said to exist when the actual state and the desired state of the consumer are not the same. Such a situation gives rise to a need. Need recognition marks the start of the decision-making process. Du Plessis (1991:

29) refers to Engel *et al*, (1986) who point out the high and low involvements in consumer decision-making. According to Engel *et al* (1986), some decisions by consumers involve fully active reasoning as in extended problem solving. In other cases, the consumer is more passive in his decision-making. The three meaningful factors, which can activate the degree of active reasoning by consumers, are involvement, pressure and differentiation of alternatives. Du Plessis (1991:25) quotes Loudon and Bitta (1984) who define involvement as '... the personal relevance or importance that a consumer perceives in a given purchasing situation'. Pressure may emanate from the social environment. The differentiation of alternatives refers to the variety of a choice available to the consumer.

Rice (1995:297) emphasises that Engel, Blackwell and Miniard (1986) identify three key determinants as the start of need recognition requiring high consumer involvement in problem solving/decision-making. These are:-

- Information stored in the memory;
- Individual differences;
- Environmental influences.

Such need recognition is likely to be linked to factors like self-concepts, pressure from reference groups and situations.

The next stage in the Engel-Blackwell-Miniard (1986) model is information search, which can be either internal memory search or external search. The internal memory search establishes whether the consumer has enough information about available options to be able to make a decision. In low involvement consumer decisions, further information search may often not be required. However, in case of high involvement decision-making, external search usually takes place (Rice, 1995 :298).

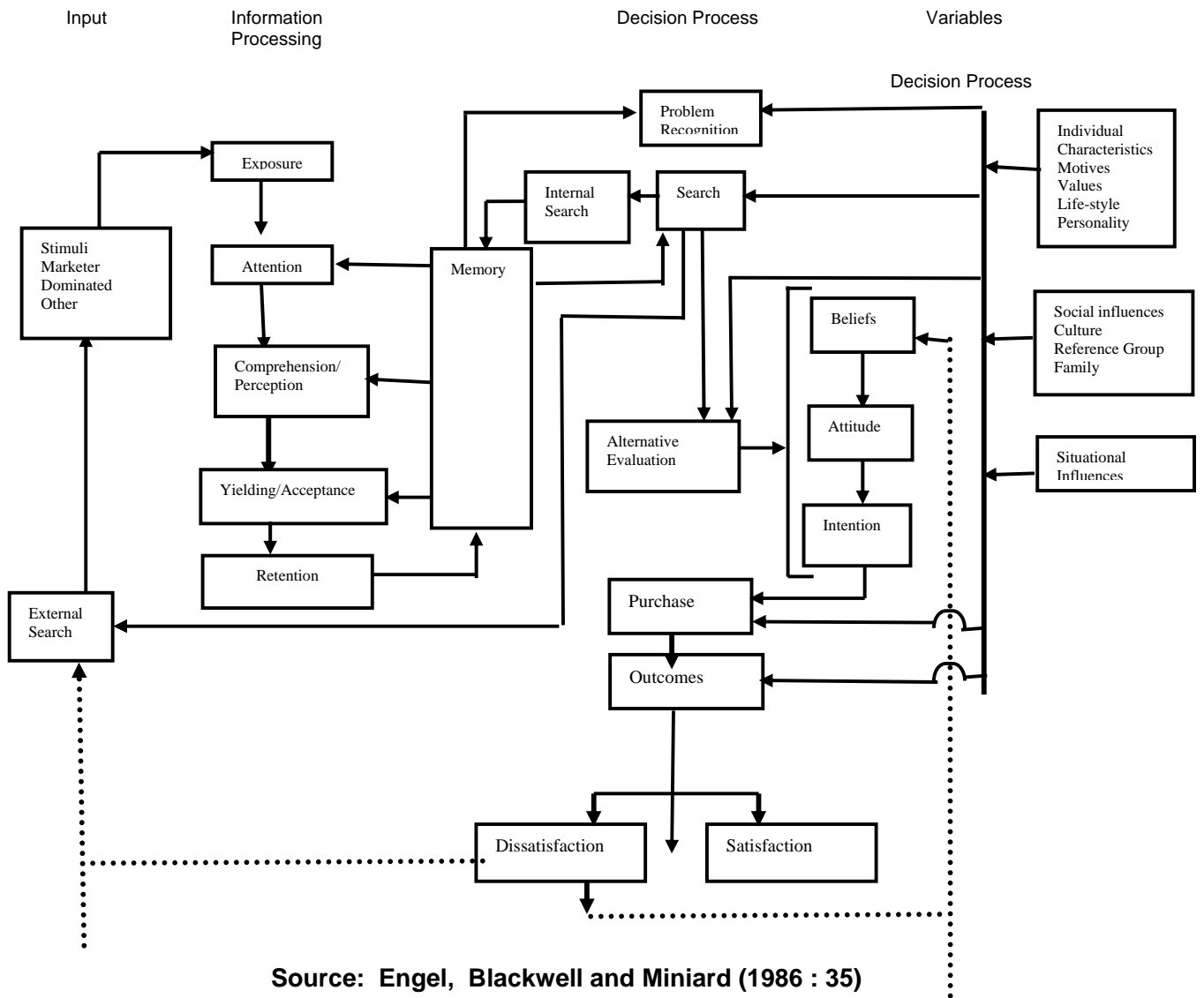
Alternative evaluation follows information search in the Engel-Blackwell-Miniard (1986) model. The consumer evaluates the alternatives available to him against a set of criteria, which stem from his beliefs, attitudes and intentions. The differentiation of alternatives is the consumer's perception as regards alternatives provided by variety and choice. In the event of potential advantages, a consumer might investigate and evaluate possibilities. The consumer might undergo high or low involvement problem solving behaviour. The main difference between high and low problem solving behaviour is not in the process being different; but in the time and effort put into external information search and alternative evaluation. Du Plessis (1995:29) reports the views of Engel *et al* (1986) that time being a determining factor, the consumer may not come to an actively reasoned decision. For example, a consumer with a long list of items including soap, paper, beans, coffee may not devote much time and effort to the choices to be made while shopping.

Purchase and outcomes form the final stage of the model. The outcome of a purchase can be either satisfaction or dissatisfaction. The outcome depends on the degree to which the purchase meets the evaluation criteria and the expectations of the consumer. The dotted lines in the model in figure 3.4 (p.129) is feedback from satisfaction/dissatisfaction and reinforces/weakens beliefs, attitude and intention (Rice, 1995:303).

In his concluding remarks, Du Plessis (1991:32) states that 'the Engel and Blackwell model (1982) and the Engel-Blackwell-Miniard model (1986) are not radically different. Both models focus on the decision-making process'. An appreciation of the Nicosia model, the Howard and Sheth model, the Engel-Blackwell model and the Engel-Blackwell-Miniard model is given in next section 3.3 ( p. 130).

**Fig : 3.4 - THE ENGEL-BLACKWELL-MINIARD MODEL OF CONSUMER BEHAVIOUR**

*(Dotted line indicates feedback)*



**Source: Engel, Blackwell and Miniard (1986 : 35)**

### **3.3 AN APPRECIATION OF THE MODELS**

The models described in the preceding sections seek to provide explanations for consumer behaviour. All of them do certainly have their importance, even if their appreciation may vary. Du Plessis (1991:21) quotes Mellot, (1983), Zaltman and Wallendorf (1983) who see the Nicosia Model as containing positive aspects which are in the recognition given to the many intermediate steps between attitude formation and the purchase of a product. According to Rice (1995:309), the model shows the interactions between the four fields that may be initiated by the firm and by the consumer. The model has the advantage of showing this interaction and of not considering the consumer in isolation of the firm. Moreover, the model does not assume that attitude leads directly to purchase, but instead it activates the decision-making process. On the other hand, the model contains few explicit indication of relationship between variables. It is descriptive rather than exploratory or predictive (Rice:1995:309). Du Plessis (1991:21) reports the views of Engel, Blackwell and Kollat (1978) who find that the Nicosia model initially had a strong impact, but did not get the necessary empirical support. Du Plessis also notes that according to Mellot (1983), the Nicosia model does not explain routinised buying behaviour.

The Howard and Sheth (1969) model focuses on the psychological variables which come into play when a consumer tries to make a decision. Du Plessis (1991:24) records the view of Cohen (1981) that the model is highly useful in explaining the decision-making process and has made a considerable contribution in the understanding of buying behaviour. Du Plessis further adds that Engel and Blackwell (1982) have qualified the model as one of the most important contributions to the literature of consumer behaviour. Critics of the model find that although the perceptual constructs are the essence of the model, these are not explained operationally. According to Du Plessis, Mellot's (1983) view is that the model is too complex to be of practical use. Also the model does not provide for situations in which a buyer has to decide between two alternatives which are not directly related (Du Plessis, 1991:24).

One outstanding feature of the Engel-Blackwell (1982) model is that it distinguishes between low-involvement behaviour and high involvement behaviour ( Du Plessis, 1991:25). The Engel-Blackwell (1982) model is conceptual in nature. It identifies and organises many influential factors and shows the interrelationships between them in a logical manner.

The Engel-Blackwell (1982) model and the Engel-Blackwell-Miniard (1986) model are unique. They both focus on the decision-making process. The interrelationship between ideas, attitudes, intentions and behaviour are clearly represented in these models. These models contain many similarities as regards the hierarchy of effects in that a change in attitude leads to a corresponding shift in intention and behaviour. The models generally agree on the memory function (Du Plessis, 1991:32).

All the models described above occupy privileged positions. Each has, in its own way, contributed to the development of ideas and knowledge. They provide convenient bases for the study of consumer behaviour.

Table 3.1 (p. 132) gives a comparison of the four models, namely, the Nicosia model, the Howard and Sheth model, the Engel-Blackwell model and the Engel-Blackwell-Miniard model. For this purpose, the different stages through which a consumer moves in his decision-making process are taken for comparing the models. In table 3.1 (p.132), the processes are given in the first column and the relevant variables in respect of each model are given in the rows.

### **Table 3.1- Comparison Of the Models**

<b>Variable/ Process</b>	<b>Nicosia Model</b>	<b>Howard &amp; Sheth Model</b>	<b>Engel-Blackwell Model</b>	<b>Engel-Blackwell- Miniard Model</b>
Input	Firm's Attributes	Signicative, Symbolic and Social input stimuli	Marketer dominated stimuli	Marketer dominated stimuli
Problem recognition/ Need	Consumer's attributes	Stimulus ambiguity	Problem recognition	Problem recognition
Information Search & processing	Search Evaluation	Overt Search	Search, external search, exposure, attention, comprehension, yield/accept retention	Search, internal search, external search, comprehension/ perception, yield/accept retention
Decision process variables	Firms attributes, message exposure, consumer's predisposition	Choice criteria, motives, brand comprehension attitude, attention, intention	Evaluation criteria, motives, beliefs, attitude, intention, life-style, norm compliance, information, culture, values, groups, family, circumstances	Individual characteristics, motives, values, life-style, personality, social influences, culture, groups, family, situations
Alternative evaluation	Evaluation of means-ends	Choice criteria	Alternative evaluation	Alternative evaluation
Decision	Action, act of purchase	Purchase	Choice	Purchase
Consumption	Consumption, Storage	Purchase & Consumption	Choice & consumption	Purchase & consumption
Post- Consumption	Experience, feedback	Satisfaction, brand comprehension confidence	Outcome, dissonance, satisfaction	Outcome, dissatisfaction, satisfaction

**Source: Author - Adapted from the models**

### **3.4 THE REVIEWED MODELS AND WATER AS A PRODUCT**



The definition from Du Plessis (section 2.7 p. 36) and the models that have been reviewed do emanate from the world of the consumer. How does these apply in the case of water? As an item of consumption, water demarcates itself from the other products. Water is unique, homogeneous and vital to life. Water happens to be a commodity, that is, its uniqueness and scarcity does not enable suppliers to command a higher price for it. While the Mauritian domestic water consumption behaviour emerges as the research progresses, the comments that follow based on own observation and association with the water sector are considered relevant. The reaction of the consumer will vary according to one of the two situations, namely, availability or non-availability of water. However, such behaviour is also determined by the consumer's environment, culture, attitude and other individual characteristics.

According to the definition, the consumer decision-making process aims at fulfilling needs. Water does fulfill the needs of man. In fact water fulfills the first of the five-tiered hierarchy of needs of Maslow (1954) which are the physiological needs. However, as regards water, the consumer has no option to decide on whether to accept or to refuse the product, on the quality, on the source of availability or point of supply, or on the price. Raw and untreated water may be available from a well or a river at a long distance. The consumer is bound to fetch it. Piped treated water may also be available in the home where such a supply system exists. In the latter case as well the consumer has no choice as regards the quality and price. The only exception could be bottled water which is used for drinking purposes only and which may be available to the consumer when surplus money is available.

The other factor, which according to the models influences consumer behaviour, is the environmental factor. This is true for water as a product as well. Culture, social class, groups and situations do influence the behaviour of water consumers. For instance, the decision to rely on a public fountain or having a water supply on one's premises is largely influenced by environmental factors.

Likewise, the decision of having a washing machine is influenced by one's environment.

However, it has to be conceded that, despite water having certain irreplaceable particularities, consumer reaction may not be inert on such counts as non-availability or lack of supply, price, place of delivery and quality. Non-availability or lack of water supply increases human hardships which engender the complaining behaviour in consumers. Expressions of sufferings, public outcry and street demonstrations against absence of or poor water supply are but too common in developing countries where both the government and the funding agencies give priority towards the improvement of water supply.

Information search by consumers referred to in the models is relevant as regards water. People would normally enquire on the source of water, for example, on the existence of the nearest well, spring or river. Where piped water is available, people would gather information as regards the mode of receiving a water connection and conditions attached to it. In this respect, consumers are assisted by relatives, friends and the supplier.

The price of water is normally set by the Central Government, the Local Government or by the supplier. The consumer has no say and is bound to accept the product. However, a price not within the means of consumers gives rise to consumer reaction which may ultimately lead policy makers to review the price of water. Also, members of Governments as elected representatives of the people cannot disregard the reactions of the people.

Unsatisfied consumers may influence the place of water delivery as well. For example, dissatisfaction may cause authorities to dig wells nearer to inhabited areas in developing countries. Certain villages do have piped water supply but at public fountains only. In such cases, the authorities may decide to

further develop the water supply network with a view to granting individual connections to the residents.

Finally, any complaint against the quality of water is viewed with great concern by the authorities and is dealt with both very rapidly and very seriously. Thus consumer behaviour regarding quality of water may bring about immediate results.

The marketing strategy, another important factor in the models within the control of the marketer which influences the consumer has to be viewed in the right context when applied to water. Suppliers of water are generally in monopoly situations. Their market strategies do not specifically aim at increasing sales as for other products. The volume of water consumed by a person is generally constant. Marketing strategies and publicity often aim at educating consumer behaviour. For example, great emphasis is laid on preservation of water resources, on elimination of wastage, on re-use of used water, on timely payment of water charges, on pollution control.

Thus, although water is a commodity which cannot be foregone by man and that suppliers of water are generally in situations of monopoly, consumer behaviour towards domestic water can be safely referred to as behaviour consumers display in searching for, acquiring, using and evaluating it for fulfilling their needs and its disposal. At the same time, complaining behaviour towards water may influence policy makers to adopt and/or review policies that may go a long way towards fulfilling consumer needs. The aim of Governments is to satisfy consumers. In any water supply project, domestic consumers are considered as the first priority.

The justification for the selection of the four models that have been reviewed for the purpose of this research is given in next section 3.5.

### **3.5 SELECTION OF MODELS**

This research has as one of its central points the behaviour of domestic water consumers in Mauritius. In this context, all the models that have been reviewed stand as convenient frameworks for research. In this thesis, the Nicosia (1966) model, the Howard and Sheth (1969) model, the Engel-Blackwell (1982) model and the Engel-Blackwell-Miniard (1986) model have been selected for more than one reason for carrying out the research. These models are classified among the grand models in consumer behaviour (Rice, 1995:295). These models have had a considerable impact on the development of consumer behaviour as a discipline on its own. This view is also expressed by Foxall (1991:182) who quotes the Nicosia model and the Howard and Sheth model as having received considerable attention from marketing educators and practitioners. Foxall further explains that these models have assisted academic research by making possible the integration of knowledge and by encouraging empirical investigations which might otherwise not have taken place or which would have required lengthy exploratory work. The literature survey, on the other hand, revealed an absence of consumer behaviour models dealing specifically with domestic water. It was, therefore, felt both convenient and appropriate to select for this study the grand models also referred to as the classical models.

The Nicosia model represents the buying behaviour pattern in an understandable and logical manner. The sequence of processes start with the firm's attributes, goes through information exposure, consumer's attributes, attitude, search, evaluation, motivation, decision/action, purchasing behaviour, consumption, storage, experience and feedback. However, it contains few, if any, clear indications of the interaction between variables. Also the model does not explain routinised buying decision (Du Plessis 1991:23).

Du Plessis reports the view of Cohen (1981) that the Howard and Sheth model is highly useful in explaining the decision-making process and the buying behaviour. It stresses on the input and output variables, as the perceptual and learning constructs. Du Plessis also explains that authors like Mellot (1983 )

have qualified the model as being 'too complex to be of practical use'. They also see the model as not providing for situations in which the consumer has to decide between two alternatives not directly related.

The Engel-Blackwell model and the Engel-Blackwell-Miniard model, according to the author, appear to be more detailed than the Nicosia model and the Howard and Sheth model. Du Plessis (1991:32) notes that both models have the decision-making process as the central point and stress on variables and their interrelationships which aim at explaining consumer behaviour. Both models contain variables like input stimuli, information processing, decision-making process, decision-making variables, and external factors. The decision-making process goes through problem-awareness, information search, alternative evaluation and purchase results.

The Engel-Blackwell-Miniard model is not radically different to that of the Engel-Blackwell model. The distinction between the two is that while the Engel-Blackwell-Miniard model is a model for high involvement purchasing, the Engel-Blackwell model considers both low-involvement and high involvement (Du Plessis, 1991:29). It is very important to realise one thing at this stage. Water is certainly a commodity of daily use. It may, on the face of it, appear as a routinised product. However, this is not as simple as it appears. The complexity of its acquisition by the consumer can only be realised in situations of scarcity, which is a feature too common in the third world. Lack of piped water supply aggravates availability which demands the deployment of personal and family resources. Droughts affected areas with or without piped water supply systems alike directly impact on the consumer. Domestic water does not only require low consumer involvement in the decision-making process, but also high involvement according to situations.

### **3.6 MODELS SELECTED FOR THIS RESEARCH - JUSTIFICATIONS**

For the purpose of the literature survey and for the research to proceed ahead, the following method has been adopted :-

- (i) four models of consumer behaviour have been selected and reviewed.
- (ii) the common aspects of the four models have been used to construct an integrated model of consumer behaviour.
- (iii) research findings have been used to formulate a consumer behaviour model with respect to domestic water in Mauritius. This model is also referred to as 'the new model' to facilitate reference to it.
- (iv) attempt is then made to establish how the new model mentioned at (iii) behaves with respect to the integrated model referred to at (ii)

The models contained in this literature survey are as below:-

- (i) the Nicosia model;
- (ii) the Howard and Sheth model;
- (iii) the Engel-Blackwell model;
- (iv) the Engel-Blackwell-Miniard model.

The research proceeds with the models mentioned at (i), (iv) as reference points. These models wherever collectively referred to are mentioned as 'the four models' to facilitate reading.

The question that arises is the relevance of the four models to the present study. In that context, several sources were consulted. The author would view the four models among the classical models of consumer behaviour. As will be explained, these four models have been mentioned by diverse writers. However, literature survey seems to indicate that alternatives or refinement of these models by subsequent researchers do not exist. Also the type of which the four models

are and which focus specifically on the individual consumer seem to be unique. These aspects become clearer in the examples that follow.

Rice (1995:295-304) has made use of and has specifically reproduced schematically the Engel-Blackwell-Miniard model, the Howard and Sheth model and the Nicosia model. Rice (1995) also makes extensive reference to these models in his book. It is to be emphasized that that the Engel-Blackwell- Miniard model is a follow up of the Engel-Blackwell model.

Du Plessis (1991:19-32) has reproduced the four models in order to explain the consumer behaviour of individuals, namely, the Nicosia model, the Howard and Sheth model, the Engel-Blackwell model and the Engel-Blackwell-Miniard model

Foxall (1991:182-183) has explained in detail the Nicosia model and the Howard and Sheth model in order to explain consumer behaviour. Foxall has not reproduced these models graphically.

Cant *et al* (2002) do not reproduce any of the four models in their book on consumer behaviour, but do come forward with an 'overall model of consumer behaviour (2002:23). It is noted that this model contains elements of internal influences, external influences, market characteristics, personal characteristics, decision-making. All the elements mentioned by the authors are seen in the four models.

The book on consumer behaviour written by Loudon and Bitta (1993) has been referred to by most subsequent authors on the subject. This book is one of those which students of consumer behaviour would not miss to go through. The authors have reproduced graphically the Nicosia model, the Howard and Sheth model and the Engel-Blackwell-Miniard model when writing on models of consumer behaviour (1993:600-612). The later editions by the authors equally

contain these models. The authors classify these models as the contemporary models of consumer behaviour. They further qualify these models as 'the more widely quoted models.' The Engel-Blackwell model is not radically different to the Engel-Blackwell-Miniard model.

The work of Shiffman and Kanuk (1996) on 'Consumer Behaviour' has been edited several times. The authors have been referred to by several subsequent authors on consumer behaviour. Again, it is noted that Shiffman and Kanuk have reproduced the Nicosia model, the Howard and Sheth model, the Engel-Blackwell-Miniard model (1996:644-650). The authors have classified these models as the 'comprehensive models' of consumer behaviour.

Purchasing behaviour by Mauritian consumer by Essoo and Chellum (1999) do not contain any model of consumer behaviour. It is noted that the authors have referred to the environmental influences, the individual differences and the psychological processes in order to explain consumer buying behaviour. These factors are present in the four models that have been literature surveyed.

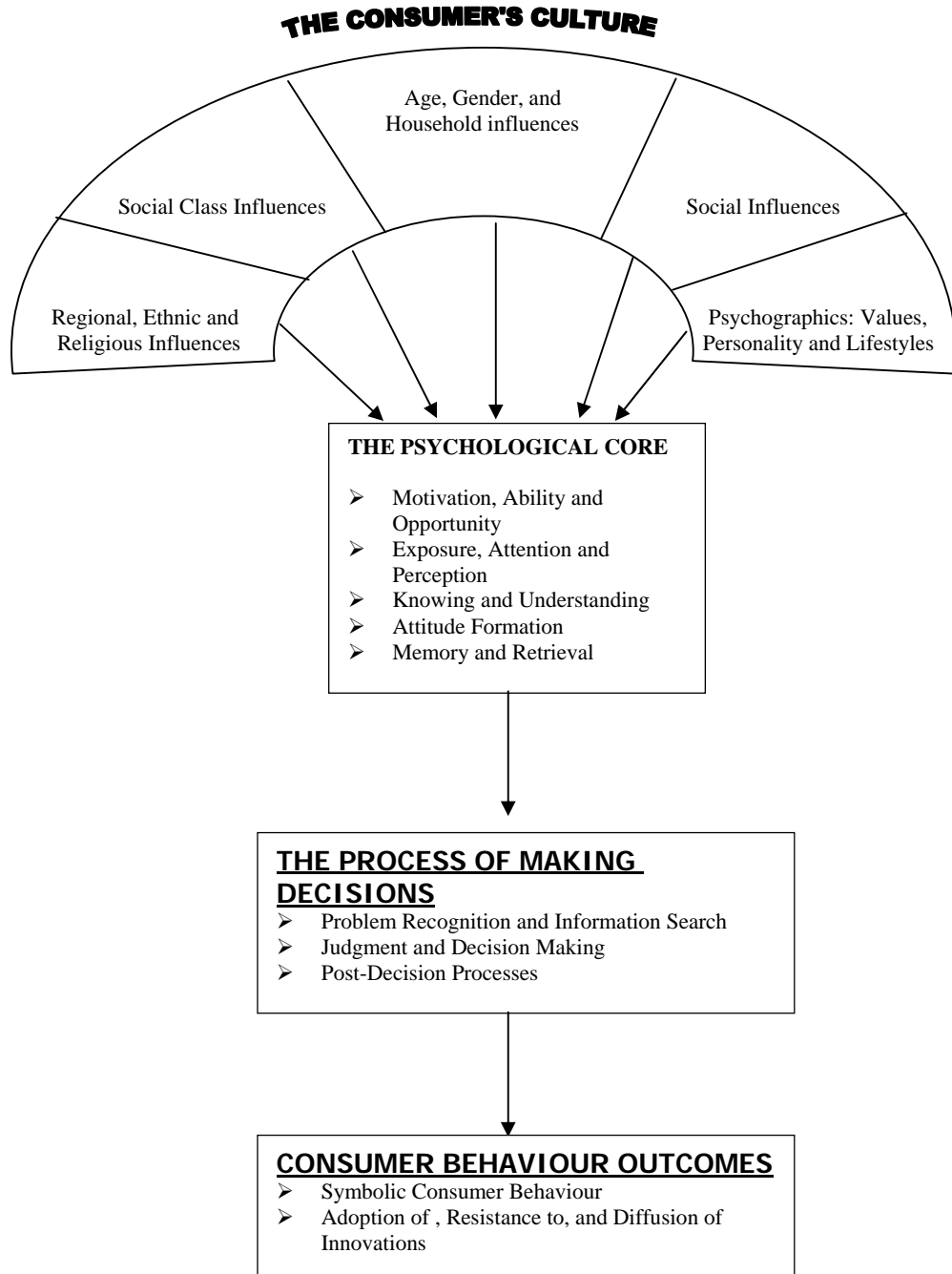
Blythe (1997) does explain the essence of consumer behaviour; but does not put forward graphically any model of consumer behaviour. However, the author has made quite some references to the Engel-Blackwell-Miniard model (1997:101, 113, 134).

Kardes (2002) focuses more on consumer behaviour from the managerial decision-making perspective. It is noted that the book does not contain any model of consumer behaviour of the type which has been literature surveyed.

Hoyer and MacInnis (2001) have not reproduced any of the four models of consumer behaviour. However, the variables contained in these models are used by the authors in order to explain consumer behaviour. In that context, Hoyer and MacInnis (2002:14) have put forward a model of consumer behaviour. This model is reproduced in figure 3.5 below:-



**Fig. 3.5 A Model of Consumer Behaviour**



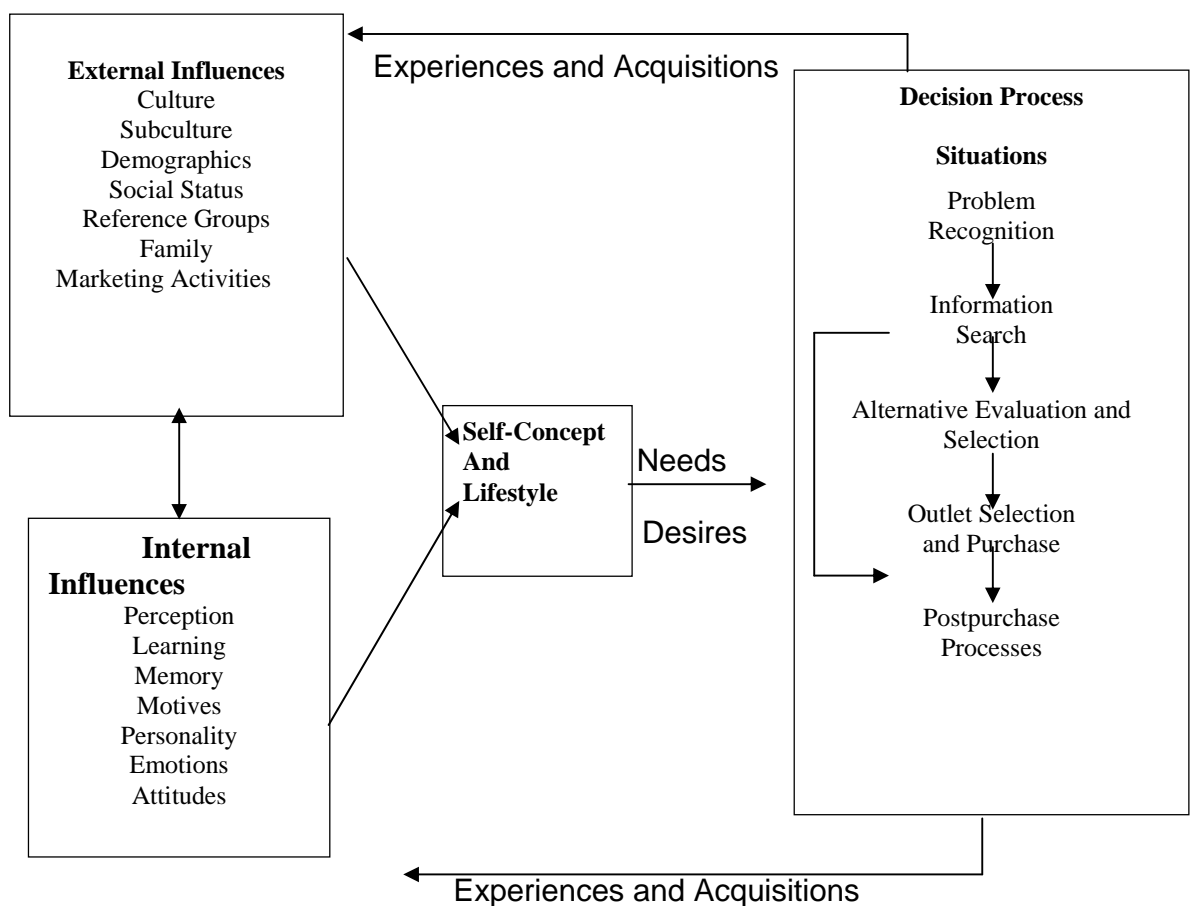
**Source: Hoyer and MacInis (2001: 14)**

The variables contained in this model include the psychological core, that is the internal consumer processes, the process of making decisions, the consumer's

culture, that is external processes and the consumer behaviour outcomes. The content of this model is therefore not different to those of the four models that have been literature surveyed.

Hawkins *et al* (2002) have not reproduced any of the four models that have been literature surveyed. However, they have used the variables contained in these models to explain consumer behaviour. Their book on consumer behaviour focuses on building marketing strategy. Hawkins *et al* (2002:26) do come forward with an 'overall model of consumer behaviour'. This model is reproduced in figure 3.6 below.

**Fig. 3.6 Overall Model of Consumer Behaviour**



**Source: Hawkins *et al* (2002 : 26)**

This model contains the following factors :-

- External influences : culture, subculture, demographics, social status, reference groups, family, marketing activities.
- Internal influences : perception, learning, memory, motives, personality, emotions, attitudes.
- Self-concept and lifestyle
- Decision processes ; situations, problem recognition, information search, alternative evaluation and selection, outlet selection and purchase, postpurchase processes.

These factors are equally present in the four models that have been literature surveyed. It is noted that this 'overall model of consumer behaviour' of Hawkins *et al* (2002) is similar to the four models even if the layout of its elements is slightly different.

Solomon and Rabolt (2004) focus on consumer behaviour in fashion. No model of consumer behaviour from other sources similar to the models is reproduced in their book.

Shutte and Charlante (2000) have focused their writing on consumer behaviour in Asia. The authors have used variables contained in the four models to explain consumer behaviour. It is noted that no reference is made by them to the Nicosia model, to the Howard and Sheth model, to the Engel-Blackwell model and to the Engel-Blackwell-Miniard model. Their book does not contain a model of consumer behaviour in the east as the four models.

It is noted that the Nicosia model, the Howard and Sheth model, the Engel-Blackwell model and the Engel-Blackwell-Miniard models have been used and reproduced by few well-known authors who are considered as authorities in consumer behaviour and often quoted (Rice, 1995, Loudon and Bitta, 1993, Schiffman and Kanuk, 1996). Moreover, these models have not been put to test

or questioned by subsequent researchers with the result that no alternative versions of these models in lieu have been forthcoming.

The justification for the selection of the four models for the present study rests on more than one premise. First, these are classified as the 'grand models' in consumer behaviour (Rice, 1995:295). These models are viewed as classical models in consumer behaviour (author). They are comprehensive. The model of consumer behaviour that emanates from this research will also be evaluated against these models.

In accordance with the methodology outlined in the opening paragraphs of this chapter, the thesis, inter-alia, aims at constructing an integrated model of consumer behaviour based on the four models that have been reviewed. This exercise is undertaken in next section 3.7.

### **3.7 AN INTEGRATED MODEL OF CONSUMER BEHAVIOUR**

The objective of this section is to present the integrated model of consumer behaviour. This model combines the common aspects of the theoretical models that have been reviewed in section 3.2. (pp. 117 to 129). These models are the Nicosia model, the Howard and Sheth model, the Engel-Blackwell model and the Engel-Blackwell-Miniard model. These models, when referred to collectively, are qualified as the 'four models'. The integrated model is in figure 3.7 at the end of this section (p. 166). It serves as a 'template' against which the new model of consumer behaviour with respect to domestic water in Mauritius, which has been constructed in chapter 6 is analysed and discussed.

### 3.7.1 Major Components of the Four Models and of the Integrated model

The paragraphs that follow detail the major components among the four models before presenting their similarities and the integrated model. The Nicosia model (fig. 3.1 p. 119) contains four major components. These are: -

- (i) the firm's attributes and outputs or communications and the consumer's psychological attributes
- (ii) the consumer's search for and evaluation of the firm's output and other available alternatives
- (iii) the consumer's motivated act of purchase
- (iv) the consumer's storage or use of the product

The Howard and Sheth model (fig 3.2 p. 122) picks up from the learning theory concepts to explain buying behaviour over time as learning takes place. The four major components of this model are: -

- (i) inputs
- (ii) hypothetical constructs
- (iii) exogenous constructs
- (iv) outputs

The inputs are the significative, symbolic and social stimuli. The hypothetical constructs are shown as perceptual constructs and learning constructs. The exogenous variables are the external variables. The outputs are the consumer's responses to the inputs. These include attention, comprehension, attitude, intention and actual purchase.

The Engel-Blackwell model is shown in figure 3.3 (p. 125). The major components of this model are: -

- (i) input
- (ii) information processing

- (iii) decision process
- (iv) decision process variables
- (v) external influence

The consumer undergoes the following processes:-

- (i) motivation and need/problem recognition
- (ii) information search
- (iii) alternative evaluation
- (iv) purchase
- (v) outcomes

The Engel-Blackwell-Miniard model (fig. 3.4 p. 129) is an improvement of the Engel-Blackwell model. It depicts consumer behaviour as a decision process of five processes which take place over time. The processes are: -

- (i) motivation and need recognition
- (ii) search for information
- (iii) alternative evaluation
- (iv) purchase
- (v) outcomes

As shown in the model, the variables are grouped together into four categories as below to form the major components of this model : -

- (i) stimulus inputs
- (ii) information processing
- (iii) decision process
- (iv) variables influencing decision process

Seen from the four models aforementioned, the major components of the integrated model are as follows :-

- Inputs
- Information processing
- Decision process
- Decision variables

The next step is to detail the common elements in the four models and to show how they exist in the integrated model. For this purpose, the sequence of processes outlined are input, information processing, decision variables and decision-making process.

### **3.7.2 The Input Components And the Four Models**

The 'Input' constitutes one major component of the four models. In the Nicosia model, the firm's attributes, the message exposure and the consumer's attributes and predispositions are in sub-fields one and two. These variables which influence the consumer's attitude constitute the input to the model. In the Howard and Sheth, Engel-Blackwell and Engel-Blackwell-Miniard models, 'input' is specifically mentioned. These models begin with the input variables.

Consequently 'Input' which is common to the four models forms one of the components of the integrated model. In order to facilitate comparison of the input variables in the four models, these are mentioned in table 3.2 (p. 148) which follows.

**Table 3.2 The Input Variables**

Model	Input Variables
Nicosia model	<ul style="list-style-type: none"><li>• Firm's attributes</li><li>• Message exposure</li><li>• Consumer's attributes especially predispositions</li></ul>
Howard and Sheth model	<ul style="list-style-type: none"><li>• Significant stimuli</li><li>• Symbolic stimuli</li><li>• Social stimuli</li></ul>
Engel-Blackwell model	<ul style="list-style-type: none"><li>• Marketer-dominated stimuli</li><li>• Other stimuli</li></ul>
Engel-Blackwell-Miniard model	<ul style="list-style-type: none"><li>• Marketer-dominated element</li><li>• Other stimuli</li></ul>

**Source : Author - Adapted**

In above table 3.2, the input elements that come out as common in the four models are grouped as the firm's attributes, the product attributes and the social environment. These are accordingly explained in the succeeding paragraphs.

In the Nicosia model, the input constitutes the firm's attributes in sub-field one. At this stage, the firm exposes itself and its products to the consumer through a process of communication, which includes advertisement and publicity. This aspect is again seen in the Howard and Sheth model where the firm solicits the patronage of the consumer by exposing itself and its products to the latter. The Engel-Blackwell model and the Engel-Blackwell-Miniard model specifically



mention the marketer dominated stimuli as inputs. These stimuli obviously include the firm's attributes.

The second common elements in the four models are the product attributes. In the Nicosia model, the 'message exposure' indicates that the firm produces some type of communication to which the consumer is exposed. The aim of such communication is to influence the consumer and to create a need in him for the firm's products. In the Howard and Sheth model, the significant stimuli are the actual elements of the product, for example, quality, price and service. The symbolic stimuli are those generated in the product in symbolic form, such as in advertisements. Both these stimuli are related to and emanate from the firm. The Engel-Blackwell model and the Engel-Blackwell-Miniard model specifically mention the 'marketer-dominated stimuli', thus indicating that these stimuli to which the consumer is exposed emanate from the firm and include its products.

The third element common in the four models and contained in table 3.2 (p. 148) is the social environment. In the Nicosia model, the social environment of the consumer may be seen in the consumer's attributes in sub-field two. In the Howard and Sheth model, the social stimuli are specifically mentioned. Since a consumer generally interacts within the environment, the social environment may be conceived as 'other' stimuli both in the Engel-Blackwell model and in the Engel-Blackwell-Miniard model.

For the construction of the integrated model (fig. 3.7, p. 166), based on the common aspects of the four models, and as explained in the preceding paragraphs, the 'Input' constitutes a major component of the model. The input component variables in the integrated model are :-

Component : Input  
Variables : Firm's attributes

: Product attributes

: Social environment

### 3.7.3 Information Processing and the Four Models

The next common element in the four models is information processing. This is shown in table 3.3 below before being explained.

**Table 3.3 Information Processing**

Model	Information Processing variables
Nicosia model	<ul style="list-style-type: none"><li>• Search</li><li>• Evaluation</li></ul>
Howard and Sheth model	<ul style="list-style-type: none"><li>• Stimulus ambiguity</li><li>• Attention</li><li>• Overt search</li><li>• Perceptual bias</li></ul>
Engel-Blackwell model	<ul style="list-style-type: none"><li>• Exposure</li><li>• Attention</li><li>• Comprehension</li><li>• Yielding/acceptance</li><li>• Retention</li></ul>
Engel-Blackwell-Miniard model	<ul style="list-style-type: none"><li>• Exposure</li><li>• Attention</li><li>• Comprehension</li><li>• Yielding/acceptance</li><li>• Retention</li></ul>

**Source : Author - Adapted**

In the Nicosia model (fig. 3.1, p.119), the firm's message may create positive or negative attitude in the consumer. In the event of a positive attitude, the consumer becomes motivated to gather more information. At this stage, search activity occurs whereby the consumer may also be involved in searching his memory for relevant information. In the Nicosia model, search takes place in field two. The consumer is here also involved in the search for and in the evaluation of the firm's output and other alternatives available.

In the Howard and Sheth model, information processing is in the perceptual constructs. The four variables in this construct are the stimulus ambiguity, attention, overt search and perceptual bias. As a result of the inputs in figure 3.2 (p. 122), the consumer experiences stimulus ambiguity. Inputs may retain his attention. This attention may be subject to perceptual bias which means distortion or change in information. Alternatively, the consumer may engage in further, that is, overt search for information.

In the Engel-Blackwell model and in the Engel-Blackwell-Miniard model (pp. 125, 129), 'Information Processing' is specifically mentioned. The relevant variables are exposure, attention, comprehension, yielding/acceptance and retention. In these two models, exposure takes place involuntarily, for example, through advertisements, or deliberately through the active search for information. This exposure captures the consumer's attention. From thereon, the consumer moves to the comprehension stage which means deriving meaning from information that have been attended to, in which case, decision-making follows. The meaning is retained in the memory.

As shown in the preceding paragraphs, the common component and variables in the four models are summarised below:-

- Component : Information processing
- Variables : Memory:

: Exposure  
: Attention  
: Comprehension  
:Yielding/acceptance  
:Retention

The inclusion of memory among the variables is explained by the fact that processing of information whether previously existing in the consumer's memory or emanating from the input stimuli takes place in the memory. In the integrated model, as in the four models, exposure to the input stimuli is processed by the consumer only if those stimuli capture his attention. The consumer tries to comprehend those stimuli. He is either brought about to reject, that is to yield those stimuli or to accept them. In the latter case, he retains them in his memory. The information processing components and its variables in the integrated model are as follows :-

- Component : Information processing
- Variables : Memory  
: Exposure  
: Attention  
: Comprehension  
:Yielding/acceptance  
:Retention

#### **3.7.4 Decision Variables And the Four Models**

The decision variables which assist the consumer in his decision-making constitute another common element which is contained in the four models reviewed in this chapter and which form part of the integrated model. The decision variables are termed differently in the four models. These are shown in table 3.4 (p. 153) before being explained.

**Table 3.4 Decision Variables**

Model	Decision variables
Nicosia model	<ul style="list-style-type: none"> <li>• Evaluation</li> <li>• Motivation</li> </ul>
Howard and Sheth model	<ul style="list-style-type: none"> <li>• Motives</li> <li>• Choice criteria</li> <li>• Brand comprehension</li> <li>• Attitude</li> </ul>
Engel-Blackwell model	<ul style="list-style-type: none"> <li>• Motives</li> <li>• Evaluative criteria</li> <li>• Lifestyle</li> <li>• Normative compliance and informational influence</li> <li>• Cultural norms and values</li> <li>• Reference group/family</li> <li>• Unanticipated circumstances</li> </ul>
Engel-Blackwell-Miniard model	<p>Individual characteristics</p> <ul style="list-style-type: none"> <li>• Motives</li> <li>• Values</li> <li>• Life-style</li> <li>• Personality</li> </ul> <p>Social Influences</p> <ul style="list-style-type: none"> <li>• Culture</li> <li>• Reference Group</li> <li>• Family</li> </ul> <p>Situational influences</p>

**Source : Author - Adapted**

In the Nicosia model, the term 'motivation' indicates a decision variable. The learning constructs in the Howard and Sheth model equally contain the decision variables. The Engel-Blackwell model explicitly makes mention of decision process variables and of variables influencing decision process, while the Engel-Blackwell-Miniard model speaks of variables influencing decision process.

In the Nicosia model, the term 'motivation' which follows evaluation implies that certain elements have been considered by the consumer which enable him to take a decision. These elements could be individual, social or situational. They equally imply the evaluation criteria, the evaluation of alternative brands and the consumer's motives to achieve his goals.

The perceptual constructs in the Howard and Sheth model indicates a progression from the perceptual constructs in the decision - making process. The variables in the learning constructs are equally the decision variables. These are motives, choice criteria and brand comprehension. Other elements which are implied by these variables could be individual, social and situational. These variables may lead towards an attitude in the consumer. Such attitude may result in an intention to purchase a brand and to create confidence therein.

The decision variables in the Nicosia model and in the Howard and Sheth model are explicitly present in the Engel-Blackwell model. These are described as evaluative criteria, lifestyle, normative compliance and informational influence. The external variables are cultural norms and values, reference group/family and unanticipated circumstances. These variables combine to create the motive which assists the consumer in the decision- making.

The Engel-Blackwell-Miniard model is similar to the four models referred to in the preceding paragraphs as regards the decision variables. These are the individual characteristics which include motives, values, life-style, personality;

social influences, that is culture, reference group, family; and situational influences. It is to be noted that while the Engel-Blackwell model shows the decision process variables and the external influences separately, these are combined together as variables influencing decision process in the Engel-Blackwell-Miniard model.

The common decision variables present in the four models reviewed in this chapter and described in the preceding paragraphs have been taken care of in constructing the integrated model (fig. 3.7, p. 166). These are shown in this model as :-

Component	: Decision variables
Variables	: Individual
	: Social
	: Situational
	: Evaluation criteria
	: Motive
	: Intention

### **3.7.5 The Decision Process And the Four Models**

The decision process is present in all four models reviewed in this chapter. This process is clearly mentioned in the Nicosia model, in the Engel-Blackwell model and in the Engel-Blackwell-Miniard model; while in the Howard and Sheth model, it is shown as purchase. In the four models, this process and its variables are as stated below. These are subsequently explained :-

Component	: Decision process
Variables	: Problem recognition
	: Information search and evaluation
	: Decision-making
	: Post-consumption

### 3.7.6 Problem Recognition And the Four Models

The consumer decision-making process begins with the recognition of a problem. This is the state in which the consumer experiences a difference between his actual state and his desired state. Problem recognition gives rise to a need in the consumer. This problem recognition constitutes a common element in the four models reviewed in this chapter. These elements are shown in table 3.5 below and are subsequently explained.

**Table 3.5 Problem Recognition**

Model	Problem Recognition Variable
Nicosia model	<ul style="list-style-type: none"><li>• Consumer's attributes and predispositions</li></ul>
Howard and Sheth model	<ul style="list-style-type: none"><li>• Stimulus ambiguity</li></ul>
Engel-Blackwell model	<ul style="list-style-type: none"><li>• Problem recognition</li></ul>
Engel-Blackwell-Miniard model	<ul style="list-style-type: none"><li>• Problem recognition</li></ul>

**Source : Author – Adapted**

In the Nicosia model, the consumer's attributes and predisposition enable him to deal with a situation which can be viewed as problematic. He is called upon to decide in favour of a firm's product or otherwise following his exposure to that firm's messages. In the Howard and Sheth model, the consumer is viewed to be undergoing a problem when he experiences an ambiguous stimulus. The Engel-Blackwell model and the Engel-Blackwell-Miniard model specifically make mention of problem recognition as a result of the processing of the inputs.

As regards the integrated model, problem recognition by the consumer constitutes one of its main elements.



### 3.7.7 Information search and evaluation and the four models

While information processing in section 2.12.2 (p. 58) referred to information already in the consumer's memory and to the inputs, information search in this section means the activity undertaken by the consumer to look for additional information which he uses for evaluation purposes. In this context, the elements similar in the four models are mentioned in table 3.6 below and are subsequently explained.

**Table 3.6 Information Search and Evaluation**

Model	Information Search and Evaluation Variables
Nicosia model	<ul style="list-style-type: none"> <li>• Search</li> <li>• Evaluation</li> </ul>
Howard and Sheth model	<ul style="list-style-type: none"> <li>• Motives</li> <li>• Choice criteria</li> <li>• Brand comprehension</li> <li>• Attitude</li> <li>• Intention</li> <li>• Confidence</li> </ul>
Engel-Blackwell model	<ul style="list-style-type: none"> <li>• Search</li> <li>• Alternative evaluation</li> <li>• Beliefs</li> <li>• Attitude</li> <li>• Intention</li> </ul>
Engel-Blackwell-Miniard model	<ul style="list-style-type: none"> <li>• Internal search</li> <li>• Search</li> <li>• Alternative evaluation</li> <li>• Beliefs</li> </ul>

	<ul style="list-style-type: none"><li>• Attitude</li><li>• Intention</li></ul>
--	--------------------------------------------------------------------------------

**Source :Author - Adapted**

Problem recognition and need have been shown to exist in all the four models in section 3.7.6, p. 156). Information search by the consumer with a view to studying the problem is another element which is common in all the four models. In the Nicosia model, search in field two indicates search for information. These information are used to evaluate means-ends and in the process to also evaluate alternatives. This evaluation motivates the consumer towards decision-making.

In the Howard and Sheth model, information search and evaluation takes place in the learning construct. In this model, information search is shown as 'overt search' in the perceptual constructs. This 'overt search' together with the variables in the perceptual constructs enable the consumer to evaluate the input stimuli. For evaluation purposes, the consumer makes use of motives which push him to attain his goals. The choice criteria allow the consumer to form his attitude towards the product. One such possible attitude is confidence in the product, which results in intention to have the said product. Brand comprehension further allows the consumer to consolidate his attention towards and confidence in a brand.

In the Engel-Blackwell model, information search takes place at two levels following problem recognition. In the first instance, the consumer searches internally information already existing in his memory. He further looks for additional information externally. The consumer uses the information at his disposal to evaluate alternatives in order to solve his problem. This process may create the consumer's beliefs in the product, which belief is responsible for

attitude formation towards the product, and which in turn results in the intention to own the product.

Information search and evaluation are again present in the Engel-Blackwell-Miniard model. Information search follows problem recognition and takes place both internally in the consumer's memory and in the external environment. The consumer makes use of these information to evaluate alternative solutions to attain his goal. One possibility of this evaluation is belief in the product. This belief may engender a favourable attitude in favour of the product and in the intention to own it.

As explained in the preceding paragraphs, information search and evaluation which include evaluation of alternatives are common elements contained in the four models. Other elements common in them, which emanate from the evaluation process are, beliefs also termed as confidence, attitude and intention. All these elements contribute to the decision process. Consequently, the variables contained in the integrated model (fig 3.7 p. 166) based on the common elements of the four models are :

- Component : Information search and evaluation
- Variables : Internal search
- : External search
- : Evaluation
- : Beliefs
- : Attitude
- : Intention

### **3.7.8 Decision-Making And the Four Models**

Decision - making is obviously a common component of the four models that have been reviewed in this chapter. These are shown in table 3.7 which follows.

**Table 3.7 Decision - Making**

Model	Decision-making Variables
Nicosia model	<ul style="list-style-type: none"><li>• Decision/act of purchase</li></ul>
Howard and Sheth model	<ul style="list-style-type: none"><li>• Purchase</li></ul>
Engel-Blackwell model	<ul style="list-style-type: none"><li>• Choice</li></ul>
Engel-Blackwell-Miniard model	<ul style="list-style-type: none"><li>• Purchase</li></ul>

**Source :Author - Adapted**

In the Nicosia model, decision is specifically mentioned in field three and takes place in the act of purchase which culminates in purchasing behaviour. In the Howard and Sheth model, decision by the consumer is shown as an output. It is in the purchase. In the Engel-Blackwell model, the decision by the consumer is shown in the decision process. In this model, decision again follows intention and takes place as choice which is but the act of purchase. The same scenario is seen in the Engel-Blackwell-Miniard model. In this model, decision by the consumer is in the purchase of the brand.

In the integrated model (fig. 3.7 p. 166), the consumer's decision is shown in the decision - making process and is as below :-

Component : decision

Variable : choice/purchase

### **3.7.9 Post - Consumption And the Four Models**

Any consumer behaviour model generally contains the post-consumption process, as is the case in the four models that have been reviewed in this

chapter. Post-consumption includes feedback. Post-consumption in these models are as shown in table 3.8 below. This is subsequently explained.

**Table 3.8 Post-consumption**

Model	Post-consumption Variables
Nicosia model	<ul style="list-style-type: none"> <li>• Experience</li> <li>• Feedback</li> </ul>
Howard and Sheth model	<ul style="list-style-type: none"> <li>• Satisfaction</li> <li>• Feedback</li> </ul>
Engel-Blackwell model	<ul style="list-style-type: none"> <li>• Outcomes</li> <li>• Satisfaction</li> <li>• Dissonance</li> <li>• Feedback</li> </ul>
Engel-Blackwell-Miniard model	<ul style="list-style-type: none"> <li>• Outcomes</li> <li>• Satisfaction</li> <li>• Dissatisfaction</li> <li>• Feedback</li> </ul>

**Source : Author - Adapted**

In the Nicosia model, purchase of the product leads to its consumption and to its storage. However, the post-consumption behaviour of the consumer which follows consumption by him is shown in this model as experience. This experience may be expressed as satisfaction or dissatisfaction of the consumer. Feedback in this model takes place in field four. In the Howard and Sheth model, post-consumption is shown as outputs. In this model, this process is shown as satisfaction experienced by the consumer, which in turn serves as feedback, consolidates brand comprehension, attitude and confidence in the brand. This further shows that post-consumption experience of a purchase may affect the consumer's behaviour at another level as well whereby the consumption may

consolidate the consumer's attitude and further attract his attention in favour of the product for repeat purchase. In the Engel-Blackwell model, the post-consumption process is shown as outcomes which are represented by dissonance or satisfaction. These variables serve as feedback. While satisfaction further consolidates beliefs, attitude and intention for repeat purchase of the brand, dissonance prompts the consumer towards further external search. In this context, the Engel-Blackwell-Miniard model is similar to the Engel-Blackwell model. In the Engel-Blackwell-Miniard model, the post-consumption result is shown as outcomes which exist as dissatisfaction or satisfaction. These variables again serve as feedback. Dissatisfaction leads to further external search. Additionally, satisfaction increases beliefs in the brand, consolidates the consumer's positive attitude towards the brand and creates further intention in the consumer for further purchase of the brand.

The post-consumption elements of the four models detailed above have been used to construct the integrated model (fig 3.7, p. 166). These are :-

Component : post-consumption  
Variable : outcomes  
          : satisfaction  
          : dissatisfaction  
          : feedback

The integrated model is explained in next section 3.8.

### **3.8 THE INTEGRATED MODEL EXPLAINED**

This section explains the integrated model (fig 3.7, p. 166). This model contains the common elements of the four models reviewed in this chapter. These common elements have been explained in this section. These four models are classified as contemporary models which are widely quoted (Loudon & Bitta, 1993:605). Schiffman and Kanuk refer to them as the comprehensive models (1996:644), while Rice (1995:295) presents them as the grand models.

Unlike the economic models, these models emphasize the mental activity that occurs before, during and after purchases are made.(Loudon and Bitta, 1993:605). These models focus on the decision-making process by the consumer (Schiffman & Kanuk, 1996:644). Similar to the four models, the integrated model is divided into four major components, namely, the inputs, information processing, decision process and decision variables.

The integrated model starts with inputs. These are the firm's attributes, product attributes and the social environment. These inputs emanate from the environment external to the consumer. The firm attempts at imposing itself on the consumer by exposing the latter to its attributes through communications, which include advertisements and publicity. The product attributes can be significant and symbolic as shown by Howard and Sheth in their model (fig 3.2, p. 122). The significant attributes are the actual attributes which the consumer comes to know; whereas the symbolic attributes are those generated by the firms in symbolic forms such as in advertisements. The social inputs in the integrated model are those generated by the social environment, which includes the family, friends and other social groups. One fundamental fact in this model is that at the input stage, no relationship exists between the consumer and the firms and their products.

The inputs in the integrated model lead to the information processing stage. At this stage, the consumer strives to derive meaning from the inputs. Information processing starts with the exposure of the consumer to the inputs. Such exposure may be involuntary, such as through advertisements, or voluntary through deliberate search for information. Further examination of the inputs captures the attention of the consumer. Such being the case, the consumer tries to comprehend, that is to derive meaning from the inputs. In this process, the consumer rejects some of the inputs and accepts or retains those that are relevant. Comprehension of the inputs leads to their retention in the memory.

One important aspect of the information processing stage is that it may lead to problem recognition, that is, to a need in the consumer.

Before presenting the decision process, it is important to explain the decision variables. In the integrated model, the decision variables are those that relate to problem recognition and contribute to the decision-making process. This problem recognition, it is noted, already exists in the memory of the consumer as a result of information processing. The decision variables in the integrated model are the individual characteristics, the social and cultural elements and the situational factors. The social and cultural elements include culture, social class, social groups, family and friends. Individual characteristics include beliefs, attitudes, personality, motivation, involvement, knowledge and resources. Situational factors are the actual state of the consumer, his resources including his finance and any projected or unexpected happening.

Decision-making in the integrated model takes place in the decision-process stage. Problem recognition leads the consumer to search for more information. This search takes place at two levels. In the first instance, it takes place internally in the consumer's memory and subsequently in the external environment. With all the information at his disposal, the consumer evaluates the alternative brands. This evaluation, if positive, creates the belief in the brands, a favourable attitude towards it and an intention to purchase it. Thus purchase and subsequently consumption takes place.

The next stage in the integrated model is devoted to the post-consumption process. Outcomes in this model refer to the consequences of the consumption process which also provides feedback. The outcomes may be satisfaction or dissatisfaction. In case of satisfaction, the consumer's beliefs, attitudes towards and intentions to repeat purchase of the specific brand get consolidated. If the consumer experiences dissatisfaction, he undertakes further external search for information. This closes the loop of the integrated model.

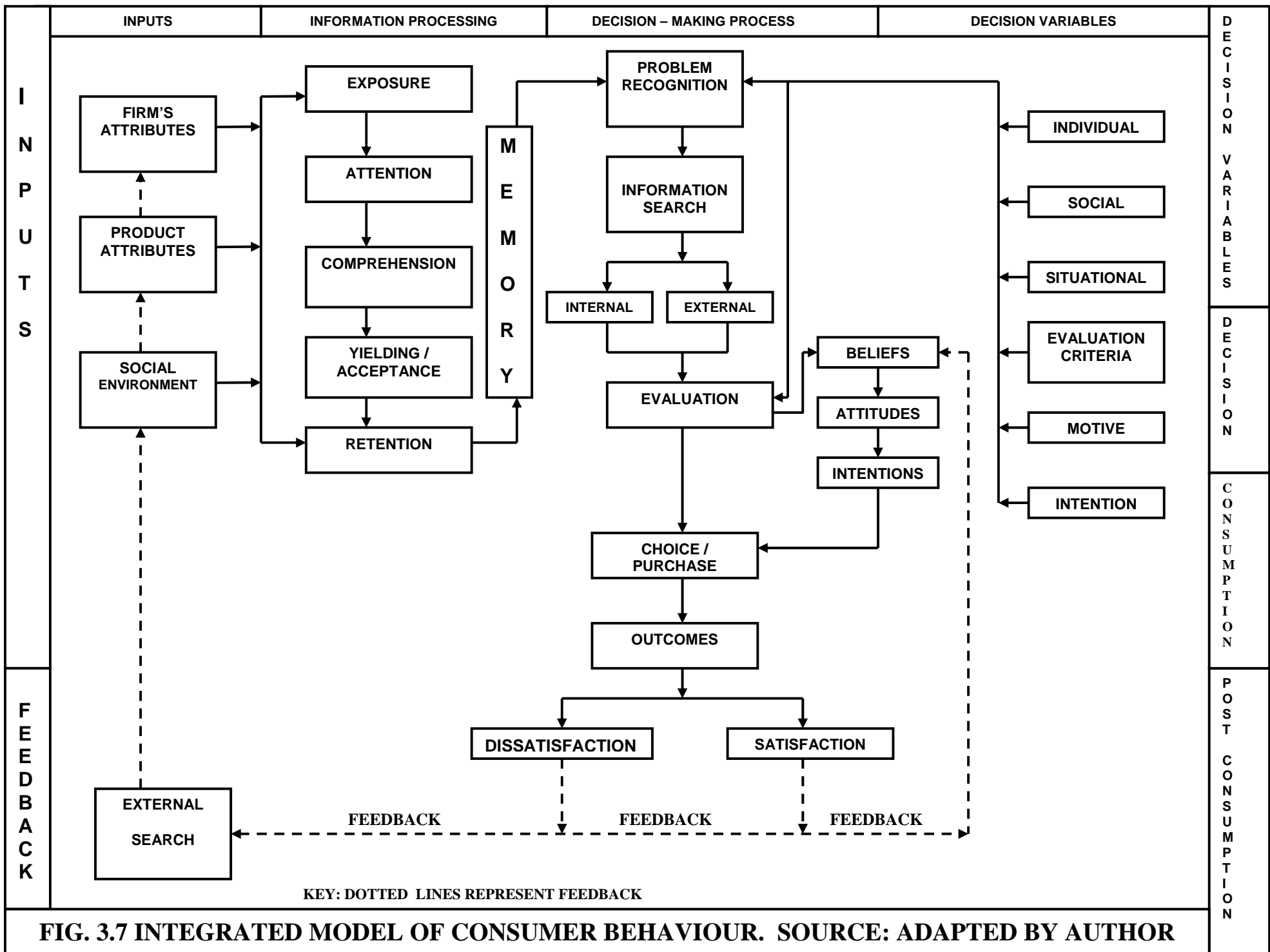


As explained, the integrated model is constructed with the common elements present in the four models that have been reviewed in this chapter. These models are the Nicosia model, the Howard and Sheth model, the Engel-Blackwell model and the Engel-Blackwell-Miniard model. The importance of the integrated model is that it serves as a framework to analyse the consumer behaviour model in respect of domestic water in Mauritius which is constructed as a result of this research.

### **3.9 CONCLUSION**

This chapter contains a review and an appreciation of the selected grand models of consumer behaviour have been carried out, namely, the Nicosia model, the Howard and Sheth model, the Engel-Blackwell model and the Engel-Blackwell-Miniard model. The Engel-Blackwell-Miniard model is an improvement of the Engel- Blackwell model.

All the models discussed in this review provide convenient frameworks for the research. The importance of these models further lies in the fact that their common elements have contributed in constructing an integrated model of consumer behaviour. This integrated model serves as a framework against which the new model of consumer behaviour in respect of domestic water in Mauritius which is developed in chapter 6 is analysed and discussed.



**FIG. 3.7 INTEGRATED MODEL OF CONSUMER BEHAVIOUR. SOURCE: ADAPTED BY AUTHOR**

# CHAPTER 4

## RESEARCH OBJECTIVE AND METHODOLOGY

### 4.1 INTRODUCTION

This chapter contains the research methodology adopted to finalise the theoretical parts of the study contained in chapters 2 and 3. The study focuses on the consumption of domestic water in Mauritius. It aims at drawing conclusions that would allow insight into the behaviour of domestic water consumers in Mauritius. In this context, a survey has been carried out, hypotheses tested, theories formulated and a model of consumer behaviour with respect to domestic water in Mauritius constructed.

It is important here to differentiate between 'water supply' and 'water consumption' in the context of Mauritius. The distinction has been clearly explained in section 1.3 of chapter 1 (p. 3).

In this chapter, the objective of the research as contained in chapter I is mentioned in the first instance. The research strategy and the research design are then detailed. The reference to the sources of information is followed by a definition of the universe, the presentation of the sampling technique and of the sample. The questionnaire design is then discussed followed by a description of the interview. The data analysis entails the description of data comparison, the techniques used for data analysis, for hypothesis testing and for the sustainability of hypothesis. The chapter ends with the presentation and discussion of the hypotheses and of the questionnaire.

## 4.2 OBJECTIVE OF THE RESEARCH

The objective of the research is to study consumer behaviour with respect to domestic water in Mauritius, to develop theories and to answer the question :‘What does the consumer behaviour model for domestic consumption of water in Mauritius look like?’ In the process, the research further attempts at :-

- (i) Establishing whether cultural, geographical and/or occupational and any other variables bear any causal relationship with domestic water consumption in Mauritius.
- (ii) Defining the perception of consumers towards domestic water as a product of consumption in Mauritius

In order to achieve the objectives of the research, the thesis covers the following areas related to consumer behaviour:-

- (a) the inputs
- (b) the pre-purchase information seeking behaviour;
- (c) the decision variables
- (d) the decision-making behaviour
- (e) the purchasing behaviour
- (f) the consumption behaviour;
- (g) the post-consumption behaviour including satisfaction, dissatisfaction and remedial action.

These areas constitute the processes generally seen in consumer behaviour. These are equally present in the models that have been reviewed in chapter 3. There does exist a link between these areas or processes and those in the integrated model in figure 3.7(p. 166). This integrated model contains the common aspects of the four models. The components of the integrated model are inputs, information processing, decision-making process and decision variables. The inputs mentioned at (a) emanate from the outside environment in

the integrated model. The pre-purchase information seeking behaviour mentioned at (b) is shown as information processing in the integrated model. The decision variables at (c) are specifically mentioned in the integrated model. The decision-making behaviour mentioned at (d) exists as decision-making process in the integrated model. The purchasing behaviour mentioned at (e) is indicated as choice/purchase in the integrated model. Consumption behaviour mentioned at (f) is in the consumption process which follows choice/purchase in the integrated model. Post-consumption behaviour mentioned at (g) forms part of the decision-making process in the integrated model and is shown as outcomes.

The following clarifications are necessary to understand this study in its right context and more specifically the areas (a) to (g) mentioned in the previous paragraph. These are explained as follows:-

- (a) The inputs refer to messages related to water supply in Mauritius.
- (b) The pre-purchase information seeking behaviour is in respect of information processing which will enable the consumer to decide whether or not to acquire a water supply. Water supply refers to the infrastructure which is more fully explained in section 1.3 ( p. 3).
- (c) The decision variables specifically refer to domestic water.
- (d) The decision-making behaviour is in relation to acquiring a water supply;
- (e) The purchasing behaviour refers to the act of paying for and receiving a water supply. It includes payment of the water charges for the water that has been consumed.
- (f) The consumption behaviour refers to water usage for domestic purposes;
- (g) The post-consumption behaviour is again in the context of domestic water consumption in Mauritius.

In order to attain the objectives of the research, the study, inter-alia, attempts at establishing the linkages between the consumer behaviour processes (a) to (g) and the consumer behaviour processes in the four models that have been reviewed in chapter 3. The relationships to be established are simplified in table 4.1. This table gives a summary of the processes (a) to (g) above which are in respect to domestic water in Mauritius as shown in column 1 of the table and how they exist in the four models. Each row shows the process under each model as indicated which corresponds to the process in the first column. These processes are self-explanatory and for understanding them they have to be read with reference to figures 3.1, 3.2, 3.3 and 3.4, which respectively depict the Nicosia model, the Howard and Seth model, the Engel-Blackwell model and the Engel-Blackwell-Miniard model (pp. 117-129).

**Table 4.1: Areas of consumer behaviour study with respect to domestic water in Mauritius and Nicosia and other models**

<b>Relationship of areas of study to the under-mentioned models</b>				
<b>Areas of Study</b>	<b>Nicosia Model</b>	<b>Howard &amp; Seth Model</b>	<b>Engel - Blackwell Model</b>	<b>Engel,- Blackwell-Miniard Model</b>
Inputs	Input : Firm's Attributes Messages	Input : Stimulus display	Input : Marketer dominated and other stimuli	Input : Marketer dominated and other stimuli
Pre-purchase information seeking behaviour in relation to a water supply	<b>Sub-field 1</b> - Firm's Attributes <b>Sub-Field 2</b> - Consumer's attributes	Perceptual constructs - overt search, stimulus ambiguity, attention, perceptual bias	Input stimuli, external search, exposure, attention, comprehension, yielding/accep- tance, retention	Input stimuli, external search, exposure, attention, comprehension yielding/accep- tance, retention
Decision variables	<b>Field two</b> Search evaluation	Learning constructs- Motives, choice criteria, attitude, intention	Evaluation criteria, motives, alternative evaluation, beliefs, attitude, intention	Alternative evaluation, beliefs, attitude, intention
Decision-making behaviour for acquiring a water supply	<b>Field two</b> - Search Evaluation	Learning constructs- Motives, choice criteria, attitude, intention	Evaluation criteria, motives, alternative evaluation, beliefs, attitude, intention	Alternative evaluation, beliefs, attitude, intention
Purchasing behaviour in relation to a water supply and water	<b>Field three</b> - Act of purchase	Output - Purchase	Choice	Purchase
Consumption behaviour with respect to domestic water	<b>Field Four</b> - Consumption, storage	Purchase and consumption	Choice and consumption	Purchase and consumption
Post-Consumption behaviour with respect to domestic water	<b>Field Four</b> – Feedback	Satisfaction	Outcome- dissonance, satisfaction	Outcome - dissatisfaction, satisfaction

**Source: Author - Adapted**

### 4.3 RESEARCH STRATEGY

The research strategy of the present study is discussed against the research classification grid of Mouton and Marais as reproduced by Venter (2000:150). This classification grid is given in table 4.2 below. The grid contains the research strategies and techniques to be used for each research goal.

**Table 4.2 Research Strategies and Techniques of Mouton & Marais:**

<b>RESEARCH STRATEGY</b>		
Research Goal	Contextual Interest (internal validity)	General interest (internal and external validity)
Exploratory Research	Overview of phenomena by means of case studies and in-depth interviews	Overview of phenomena by means of exploratory surveys
Descriptive Research	Case studies, in-depth interviews, participant observation	Sample surveys
Explanatory Research	Contextual explanations by means of case studies, historical analysis	Experimental and quasi-experimental studies

**Source: Venter (2000: 150)**

According to table 4.2, the research goal is of general interest. The thesis can be regarded as an exploratory research with a considerable input of descriptive research. According to Loudon and Bitta (1993:613), exploratory research helps to identify variables influencing consumers and discover how consumers may tend to react to those factors. This research applies in situations where sufficient information about consumers do not exist and consequently conclusions about variables influencing consumer behaviour cannot be drawn. The two significant methods used in exploratory research are consumer suggestions and focus groups (Loudon & Bitta, 1993:613). Consumer suggestions, as the words imply, are spontaneous suggestions made by the consumers. These allow businesses to discover problems encountered by consumers. Loudon and Bitta (1993:613) explain that 'focus groups generally bring together in a central setting eight to ten people with similar background to apply the principles of group dynamics and free association with a marketing



problem'. A moderator guides the discussion of the group, who interact with each other and exposes their opinions. For the present study it turned out to be more convenient to form two focus groups of eight consumers each to discuss the topic under study. Discussion guide used for qualitative discussions by the focus groups is at appendix E. The author fulfilled the role of moderator.

While carrying out the research, attempt was made to gather information on the illegal behaviour of water consumers in Mauritius. For this purpose, informal discussions were held with some thirty senior meter reading cadres of the CWA. They were the officers who were most involved on consumers' premises and with the consumers.

The thesis has also relied on descriptive research. Such research aims at gathering facts (Boyd *et al*, 1999;128). The same authors add that descriptive studies in which there is no clear hypothesis are actually more exploratory. The authors view that in order to be of maximum value, descriptive research must collect data for a specific purpose and further add that descriptive studies vary in the degree that a specific hypothesis is a guide. In line with the methods applicable to descriptive research, the present study also aims at collecting data specific to domestic water consumers in Mauritius with a view to determining their consumer behaviour. It further aims at constructing a consumer behaviour model. In addition to the interview of the focus group, data has been collected through a sample survey (section 4.6, p. 176). The questionnaire design has been explained in section 4.9 (pp. 184-188) and the questionnaire explained in section 4.16 (pp. 204-212).

The research strategy attempts at finding results with respect to the water industry in Mauritius with reference to domestic consumers. It thus aims at achieving both internal and external validity. In other words, the results have to be generalised to the objective studied and to the universe considered. From the research strategies and techniques mentioned above, it can be concluded that the most appropriate technique is an overview of the objects and phenomena

through exploratory research supported by sample surveys. Venter (2000:149), reports that "Mouton & Marais quote Selltiz *et al*, who postulate that an exploratory overview may consist of a literature review, a survey of people (or, by analogy, institutions) with experience relevant to the problem and an analysis of 'insight-stimulating' examples." Participant observation is often used and accepted to obtain internal validity. For the present study, it has been considered appropriate to also include participant observation. Consequently, the author fulfilled the role of participant observer.

In line with the research strategy, chapter 1 of this thesis gives the background to the research, chapter 2 contains a review of the foundations of consumer behaviour; while chapter 3 makes a review of consumer behaviour models. An exploratory survey has accordingly been carried out and this has been supplemented by a sample survey. The strategy used for the empirical research is primarily making the quantitative research by way of a sample survey. At the same time, qualitative research was resorted to at the exploratory stage of the research. Qualitative research has necessitated the in-depth interview of two focus groups. In addition, the author fulfilled the role of participant observer.

#### **4.4 SOURCES OF INFORMATION**

Data for this study come both from primary and secondary sources. Primary data have been collected through a personal interview, participant observation and the interview of two focus groups. Secondary sources of information include the CWA, the Central Statistical Office, the Mauritius Archives Department, the Mauritius Institute and other Institutions.

In view of the nature of the research and in order to ensure the reliability of the findings, it became necessary to collect data from primary sources. A survey was therefore undertaken through the personal interview of a sample of

domestic water consumers representative of the whole population of Mauritius. The interview consists of direct questions aimed at obtaining factual data. Data thus collected from the sample was applied to the universe. These data include -

- knowledge of problems and issues related to domestic water,
- decision-making process and choice;
- opinions, attitudes and interests;
- consumer behaviour and post-consumption behaviour;
- demographic and socio-economic variables.

#### **4.5 FOCUS GROUPS**

Focus groups constitute a convenient medium for gathering information of primary source (pp. 172,173). For the present study, focus group interviews were conducted with a view to supplementing quantitative research with qualitative research. Two focus groups, each of eight members, were constituted. The focus groups were equally composed of urban and rural consumers who were from different walks of life. It was thought proper to hold the focus group's interviews away from any official environment. By some coincidence, which turned out to be in the interest of the study, the interviews took place both in rural and urban locations. One focus groups interview was held at the author's residence, which is in a northern village. The author's wife's property and birth place in the town of Quatre Bornes in the central part of the country provided another friendly setting for the holding of the second focus group's interview. The discussion guide is at appendix E. This guide was used for qualitative discussion with the focus groups. The sessions were attended by members of the groups and by the author who fulfilled the role of moderator. Salient features of the discussions were noted down by the author.

#### **4.6 DATA COLLECTION**

The objective approach has been adopted and the direct undisguised method of data collection has been used. The nature of the research, that is getting to know the behaviour of domestic water consumers in Mauritius, has necessitated the personal survey of a sample of the population with a direct structured questionnaire and interview, the interview of the two focus groups and participant observation.

To sum up, the author fulfilled the role of moderator for the two focus groups and was also the participant observer. For the present study, the personal interview turned out to be another appropriate method of data collection in the case of Mauritius. Mail questionnaires and telephone interviews, which are also common research tools have been deliberately left out for practical reasons. The sample is representative of the whole population and it is a fact that every Mauritian is not literate. Consequently, the mail questionnaire could not be used. At the same time, telephone interviews could not be adopted because not every Mauritian has a telephone service at his place. Also, it would have been neither courteous nor practical to ask respondents to reply, to a lengthy questionnaire of forty-three questions over five pages on the telephone.

In the models which have been reviewed in chapter 3, the consumer's ability to recollect past facts is important. This is equally true in the case of domestic water consumers in Mauritius. The issue becomes clear when the element of 'problem recognition' leading to the purchase of a product in the consumer decision-making process is analysed. In the case of Mauritius, when a consumer undergoes a process of problem recognition related to water consumption, it means that the problem is a consequence of an unfulfilled need. To fulfill this need, the consumer has to acquire a water supply or share water from the water supply of another consumer. Consumption of water follows only thereafter. Thus, the behaviour of domestic water consumers in

Mauritius is directly related to the need for such water and to his decision whether to acquire a domestic water supply or not. The survey tries to collect data related to consumers of domestic water. This depends on the recollection of facts by the consumer. Thus, the selection of respondents becomes very important. In Mauritius, the water supply is attached to the premises and could have been acquired a couple of generations ago, for example, by the occupier's grandfather. In other cases the acquisition could have been made by the present occupier/owner some years back. Such consumers would perhaps not be able to fully recollect the 'problem recognition' and the 'decision-making process' which lead to the acquisition of a water supply. Replies to these items can best come from consumers who acquired their water supplies since the recent past. Thus, in order obtain accurate results, it became necessary to survey consumers of domestic water who had acquired their water supplies since a maximum period of twelve months. A period of twelve months is considered reasonable. Tests carried out among some ten such consumers revealed that they were able to recollect their problem, their decision-making process and their consumer behaviour.

#### **4.7 THE SAMPLE**

The study focuses on the consumers of Mauritius. In that respect it is limited to consumers of domestic water. The Universe can thus be defined as the domestic water consumers of Mauritius, which in other words means the whole population of Mauritius. A brief of Mauritius and its people is given in chapter 1. The variables for constituting the sample are : ethnic groups, occupational groups and urban/rural regions. Reference has been made to C.S.O (2001) in order to determine the proportion of each variable in the local population. When analysing data from the survey, items like age and level of education of respondents and in one case, the size of family were also deemed worth consideration in order to see the consumer behaviour of the respondents. These aspects are depicted in tables 4.3 to 4.5.

Population of Mauritius by urban and rural area is given in table 4.3.

**Table 4.3 urban/rural population of Mauritius**

<b>Region</b>	<b>Number</b>	<b>%</b>
Urban	503045	44
Rural	640024	56
<b>T O T A L</b>	<b>1143069</b>	<b>100</b>

Source :C.S.O.,2001

Population of Mauritius by ethnic group is given in table 4.4.

**Table 4.4 Population of Mauritius by ethnic groups**

<b>Ethnic Group</b>	<b>Number</b>	<b>%</b>
Hindu	584983	51
Muslim	195939	17
Sino-Mauritian	26104	2
General Population	336043	30
<b>T O T A L</b>	<b>1143069</b>	<b>100</b>

Source :C.S.O.,2001

Table 4.5 gives the population of Mauritius by occupational groups.

**Table 4.5 Occupational groups of Mauritius**

<b>Occupational Group</b>	<b>% of Workers</b>
Professionals,Managers, Technicians, Senior Officials	15
Middle Management, Sales and Service Workers, Clerks and Administrative Staff	22
Skilled, Unskilled and Manual Workers	63
<b>T O T A L</b>	<b>100</b>

Source :C.S.O., 2001

## 4.8 THE SAMPLING

In view of the specific characteristics of the respondents, namely, ethnic, occupational and residential groups, the non-probability sampling approach has been adopted. Tull and Hawkins (1993:547-548) provide the under-mentioned guidelines on deciding whether to use a probability or non-probability sample:

- Is there a need only to estimate proportions or averages, or should the results be very accurate and be used for projecting the total market ?
- Does the problem allow for high or low levels of error tolerance ?
- How large are non-sampling errors likely to be ?
- Is variation among sampling units expected to be high or low ?
- What is the expected cost of errors in the information ?

In contrast to probability sampling where each element of the population of interest has a non-zero chance of being selected in the sample, non-probability sampling as in the words of Cochran (1962) commonly contains such features as:

- The sample is restricted to a part of the population that is readily accessible.
- Selection is done haphazardly.
- In case of small and heterogeneous population, the sampler inspects the whole of it and selects a small sample of typical units. This is commonly referred to as judgment or purposive selection.
- The sample consists essentially of volunteers in studies in which the measuring process is unpleasant or troublesome to the person being measured.

For the present study, the quota sample, as explained in succeeding paragraphs, has been used. This is because:-

- The purpose is to project proportions and averages.
- There is relatively high tolerance and low cost of error.
- The variation between sampling units is expected to be low.
- The non-sampling errors are expected to be low.

The sample is shown in tables 4.6 to 4.9 (pp. 183,184).

Care has been taken to ensure that the whole population is well represented in the sample as far as ethnic groups, residential areas and occupational groups are concerned. Thus the quota sampling technique is chosen on the notion that certain individual characteristics must be properly represented so that results could be generalised to the whole population. The quota sampling is a compromise between a stratified and a convenience sample. In the first case, the target population is divided into segments or strata whereby each stratum contains elements of particular characteristics. Separate sampling plans are drawn for each stratum. This allows each stratum to be adequately represented (Boyd *et al*, 1999:406-409, Lehmann *et al*, 1998:304).

Given that the population of Mauritius is divided into four distinct ethnic groups, the use of quota sampling technique ensures the accurate representativeness of each group in the sample. The sample thus becomes an accurate cross-section of the Mauritian population. Moreover, the quota sampling technique is relatively cheap, quick to use and complications are kept to the minimum. Unlike random sampling, any member of the quota sample can be replaced by another with the same characteristics. This allows the interview of the number of respondents originally planned. The possibility of bias by the interviewer selecting those easiest to survey does exist. The latter weakness has been avoided in the present study through call backs made to the respondents.



The variables used in this study for sampling the population are ethnic groups, residential areas and occupational groups. The next step is to decide on the size of the sample. With regards to the sample size, Cochran (1962) recommends the following steps:-

- The elaboration of some statement of what is expected of the sample, which could be in terms of the desired limits of error or in terms of some decision/action which will be taken when the sample results will be known.
- Establishment of some expression or even equation linking the sample size with the known characteristics of the population.
- Once the sample size has been obtained, it has to be appraised to see whether it is consistent with the resources available. This will depend on estimation of cost, labour, time and materials required. Occasionally, it might be that the proposed sample size will have to be reduced. A decision will have to be taken about whether:-
  - (i) To accept a reduction in sample size.
  - (ii) To abandon the research altogether until more resources are made available.

These factors have been duly considered in structuring the sample for the present study and in establishing:-

- the size of the sample;
- the size of the sub-items within the sample, that is, the size of each sub-group studied;
- the respondent

As mentioned before, the survey is restricted to domestic consumers who had acquired a domestic water supply since a maximum period of twelve

months. Information obtained from the CWA showed that about two thousand domestic consumers had acquired a water supply during the year 2002. Ten percent of these consumers were taken to constitute the sample. The sample, thus, came to two hundred respondents. This sample size was convenient for more than one reason. The size was such that the successful completion of the survey could be envisaged. On the other hand, this research is an unfunded initiative. The cost of a personal interview of a larger sample would have been prohibitive. A proportion of one tenth of all consumers who acquired a domestic water supply, would, according to the author, bring about accuracy of results when applied to the universe. Respondents were selected irrespective of the cost of the interview from the list obtained from the CWA containing the names and addresses of domestic consumers who had acquired a supply in the year 2002.

It is relevant to summarise that the population of Mauritius which is studied is classified into:-

- (a) four ethnic groups, that is, Hindu, Muslim, Sino-Mauritian and General population;
- (b) two residential areas, that is, urban and rural;
- (c) three occupational groups, that is, professionals and senior officials; middle Management and service staff; and skilled, unskilled and manual workers.

The sub-division of the sample into ethnic groups, urban/rural areas and occupational groups is based on the ratios revealed by the population census of 2000 (C.S.O, 2001), which is not expected to undergo substantial changes in the coming years. The figures are worked out below. However, one word of caution is worth being mentioned about Sino-Mauritians. The number of Sino-Mauritians in the sample is small because of their relatively small number in the population. This sample might render extrapolation of results to this population group difficult. Consequently, as advised, special arrangements were made to

interview twenty Sino-Mauritians over and above those in the sample and see how they behave as consumers of domestic water. As stated, the ethnic group is one of the important variables considered in the survey. The sample comes out as in tables 4.6 to 4.9.

**Table 4.6. Respondents by Ethnic Groups**

<i><b>Ethnic Group</b></i>	<i><b>% in Population</b></i>	<i><b>No. in Sample</b></i>	<i><b>Add. Sino Mauritian</b></i>	<i><b>Total No. in Sample</b></i>
Hindu	51	102		102
Muslim	17	34		34
Sino-Mauritian	2	4	+20	24
General Population	30	60		60
<b>TOTAL</b>	<b>100</b>	<b>200</b>	<b>+20</b>	<b>220</b>

**Table 4.7 Respondents by Urban/Rural Areas**

<i><b>Residential Area</b></i>	<i><b>% in Population</b></i>	<i><b>No. in Sample</b></i>	<i><b>Add. Sino-Mauritian</b></i>	<i><b>Total No. in Sample</b></i>
Urban	44	88	+9	97
Rural	56	112	+11	123
<b>TOTAL</b>	<b>100</b>	<b>200</b>	<b>+20</b>	<b>220</b>

**Table 4.8. Respondents by Occupational Groups**

<i><b>Occupational Group</b></i>	<i><b>% in Population</b></i>	<i><b>No. in Sample</b></i>	<i><b>Add. Sino-Mauritian</b></i>	<i><b>Total No. in Sample</b></i>
Professionals, Managers, Technicians, Senior Managers	15	30	+3	33
Middle Management, Sales and Service Workers, Clerks and Administrative Staff	22	44	+4	48
Skilled, Unskilled and Manual Workers	63	126	+13	139
<b>TOTAL</b>	<b>100</b>	<b>200</b>	<b>+ 20</b>	<b>220</b>

The sample for the survey becomes clearer when summarized in the following form:-

**Table 4.9 The Sample**

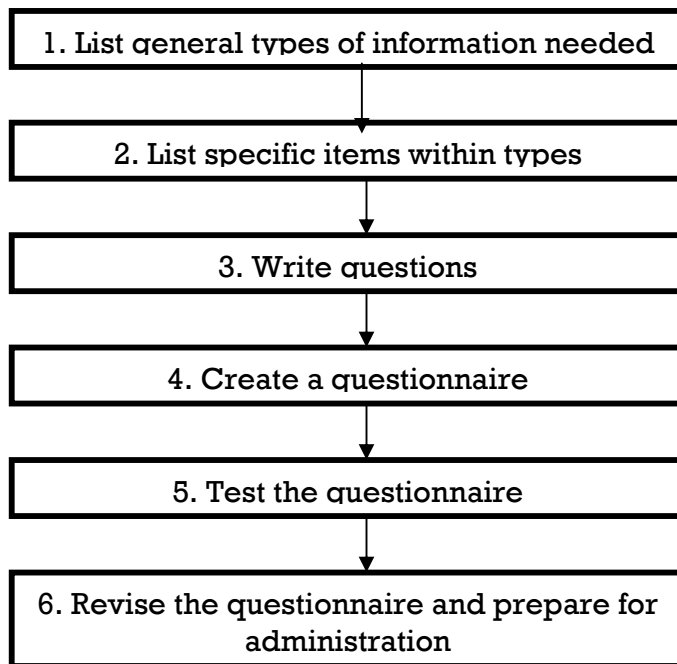
<b>Occupational/ Ethnic Group</b>	<b>Professionals, Technical Officers, Senior Officials, Managers</b>		<b>Middle Management, Sales &amp; Service Workers, Clerks and Administrative Staff</b>		<b>Skilled and Unskilled Manual Workers</b>		<b>TOTAL</b>
	<b>Urban</b>	<b>Rural</b>	<b>Urban</b>	<b>Rural</b>	<b>Urban</b>	<b>Rural</b>	
Hindu	7	8	10	13	28	36	102
Muslim	2	3	3	4	10	12	34
General Population	4	5	6	7	16	22	60
Sino-Mauritian	1 + 1	+2	+ 2	1 + 2	1 +6	1 +7	4 + 20
<b>T O T A L</b>	<b>14 +1</b>	<b>16+2</b>	<b>19 +2</b>	<b>25 +2</b>	<b>55 +6</b>	<b>71+7</b>	<b>200 + 20</b>
<b>GRAND TOTAL</b>	<b>30 + 3</b>		<b>44 +4</b>		<b>126 + 13</b>		<b>220</b>

Respondents who satisfied the pre-set criteria were interviewed. The next section is devoted to the questionnaire design.

#### **4.9 THE QUESTIONNAIRE DESIGN**

The contents of the Questionnaire are commented upon in detail in section 4.16 (pp. 204-212). The questionnaire was designed to carry out the personal survey. It is highly structured and makes no use of open ended questions. The design process of the questionnaire follows the one mentioned by Lehmann *et al* (1997: 171), which is reproduced in figure 4.1.

**Fig. 4.1 Steps for Questionnaire Design**



**Source: Lehmann *et al* (1997: 171)**

An English and a Kreole version of the questionnaire are included as Appendices B and C. An English version has been prepared to conform to the requirement of the thesis which is in English. On the other hand, Kreole is the only spoken medium understood by the whole population. It therefore stood out as the most convenient dialect for carrying out the survey. The questionnaire has therefore been also written down in kreole. Moreover, it helped the interviewers to be clear and specific.

The questionnaires were pre-tested. Ten intellectuals who had already undergone university education were required to point out instances where the two versions differed. Another ten non-intellectuals, that is, those who had studied only up to the primary level, were read the questions in Kreole to find out whether their understanding of the questions was as originally meant. This pre-testing allowed assessment of the questionnaire in order to cater for and to

eliminate any possible disparities between the two versions. This exercise proved successful in coming to the final contents of the questionnaires.

The questionnaire has been designed for personal interview keeping in mind the problems and the information required. The nature of the research and the diversity of the questions are such that the following scales have been used in the questionnaire:-

- **The Ordinal Scale**

The major part of the questionnaire makes use of the ordinal scale. According to Boyd et al (1999:321), ordinal scales are the most widely used type of scales in marketing research. These are the simplest attitude measuring scales. They serve to rank respondents according to some characteristics towards a certain product or to rank items in order of preference. Such scales make no attempt to measure the degree of favourability of the different rankings. The scales indicate that the item has more, less or same amount of characteristics being measured as some other items. Ordinal scales allow the computation of frequencies, medians, percentiles and a variety of other statistics.

It is relevant to ask the question as to how many scale points to use in the scale. This number obviously depends on the respondent's ability to discriminate on the construct and on the accuracy with which the respondent is able to make discriminations. As reported by Lehmann *et al* (1997:244), six or more scale points are normally sufficient to account for respondents' discriminatory abilities for individual analysis. For aggregate analysis, even lower scale points are needed. In general, most scales use between four and ten scale points (Lehmann *et al*, 1997:244). The survey questionnaire uses a five scale points interval.

The other question is whether there should be an odd or even number of scale points. Still a further question that arises is whether to include a don't

know or neutral point. Proponents of odd numbers argue that the presence of a neutral point allows neutral respondents to quickly indicate it. Proponents of even numbers argue that the neutral point is a cop-out, that the respondent is really leaning one way or the other and that the even number forces him to reveal which way he is leaning. On the whole, it is argued that there being the legitimacy, the respondent may be given the option to choose the neutral point (Lehmann *et al*, 1997:245). Consequently, the questionnaire for the personal interview gives the respondents the option to use the neutral point.

Finally, it had to be decided whether the scale should be balanced or unbalanced. For the balanced scale, the extreme positive and negative points are found at the two extremities of the scale, for example, very good and very poor. On the unbalanced scale, the scale moves from an extreme positive point to an extreme negative point, for example from very good to poor. In general, the balanced scales are typically employed unless there is a particular reason not to do so (Lehmann *et al*, 1997:245). Consequently, the questionnaire adopts the balanced scale.

All factors discussed above have been taken into consideration in deciding on the number of points in the scale and the type of scale where the respondents have been requested to express their preferences and judgments. Also, due consideration has been given to the fact that the respondents come from all walks of life, have varying literacy levels and belong to different socio-economic groups. Thus, to summarise, the interval scales where applicable are as below:-

- (i) contain five scale points;  
The pre-test of the questionnaire showed that respondents had difficulty in discriminating among more scale points.
- (ii) contain the neutral or no opinion;

This allowed the freedom of expression which weighed in favour of the inclusion of the neutral point.

(iii) are balanced.

This allowed the extreme points to be at the extremities of the scale.

An example is “**STRONGLY AGREE - AGREE – NO OPINION – DISAGREE – STRONGLY DISAGREE.**”

- **YES – NO Dichotomous Scale**

This scale applies to few specific questions where only two possible replies exist.

- **The Nominal Scale**

The nominal scale has been used in the questionnaire only in cases where the respondents have been required to reveal facts and not feelings or preferences. It has also been used to collect socio-economic data on the respondents. The nominal scale is useful for computing frequencies such as the percentage of the respondents in a sample who like an object in a set of different objects, and this helps in establishing the most common response (mode).

The questionnaires which contain forty-three questions over five pages are at Appendices B and C. These are explained in section 4.16 (pp. 204-212). The next section discusses the sampling technique and the sample.

#### **4.10 THE INTERVIEW**

The Kreole version of the questionnaire was used for the personal interview. The head of household was interviewed on his residential premises. The interview was carried out by the author and by four interviewers who were



known personally and who had had experience and knowledge about surveys and censuses. The interviewers were given briefings by the author. This entailed explaining the objective of the survey, the questions and their importance. They started the interview in the presence of the author. Besides the briefings, the interviewers were given a cover letter at Appendix D in order to:-

- (i) introduce themselves easily to the respondent and to inform the latter of the purpose of the study;
- (ii) ensure the respondent that the information provided by the latter would be dealt with in strict confidence and would be used for statistical purposes only.

#### **4.11 DATA ANALYSIS**

Data generated by the consumer survey were mostly ordinal or categorical where the respondents had the option of choosing one of the two replies. Lehmann *et al* (1997: 236) define the ordinal scale as below:-

- In an ordinal scale, the higher the number, the more (or less) the construct exists. Results provide broad guidelines for ranking;
- The absolute size of the number has no meaning, nor do the differences between two scale values.

Thus, in ordinal scales, strong numerical statements of relationships between variables are more difficult to determine than with interval or ratio scales. However, Boyd *et al* (1999: 321) report that there appears to be little loss in accuracy and considerable gain in interpretability if ordinal data are treated as interval data. Ordinal data is often regarded as a weak form of measurement. The ordinal form of data requires the specific selection of statistical methods. The statistical analyses have therefore been carried out using consistently the five point scales.

The SPSS 11.0 Version was used to carry out the analyses. Consequently, data generated by the consumer survey were input in the computer system and converted to the SPSS format. The quota sampling having been used, the survey had ensured the response of all consumers sampled, that is, of 220 respondents. The data input was verified against the hard copies of the Questionnaires. Then an exercise was carried out to verify if the number of replies to questions requiring single replies tallied with the number of respondents. In case of discrepancy, the questionnaire was verified and correction brought about.

#### **4.12 DATA COMPARISON**

Data come from the consumer survey. These data were compared using tables and charts. In the first instance, replies to each question have been established showing frequencies, percentages and cumulative percentages. For analytical purposes, these data have been commented upon. Where appropriate, replies to one question have been compared to those of other questions. Moreover, the replies to some of the questions have been crosstabulated against ethnic groups, occupational groups and residential regions which were the main criteria for the sample selection for the consumer survey. The crosstabulations have also been displayed graphically where found necessary. At times, the two positive top boxes, that is, strongly agree and agree and the two negative bottom boxes, that is, disagree and strongly disagree, have been grouped together to have a better view of the response pattern. Venter (2000:164) state that according to Berenson and Levine, measures of central tendencies such as the mean, may not be the ideal way to summarise large sets of ordinal data.

#### 4.13 HYPOTHESIS TESTING

Replies from the consumer survey have been used to test hypotheses. The hypotheses are given in the next section. The test of the hypotheses measure the probability that the hypothesized population value for the measure of interest could have led to the observed sample result. Hypothesis testing has been carried out to find out differences between various variables of consumer behaviour in the Mauritian context. The general steps followed in the hypothesis testing based on Berenson and Levine as reported by Venter (2000 : 168) are mentioned below:-

(i) Specifying the hypothesis

The null hypothesis ( $H_0$ ) and the alternative hypothesis are specified. When the null hypothesis is accepted, it follows that there is not sufficient statistical evidence to reject it. Consequently, the hypothesis is taken to be true. Hypothesis testing was used to test some of the research objectives.

(ii) The level of significance

In some fields of research, results with a 95% level of significance ( $P = 0.05$ ) are considered to be border line statistically significant. Results with  $P = 0.001$  are generally considered to be highly significant. However, as reported by Venter (2000:169), according to Statsoft, these classifications are still arbitrary conventions that are informally based on general research experience. In this thesis, a 95% level of confidence was used as an acceptable level of significance.

(iii) Determination of the Probability Value

The P Value or the Probability Value is used to decide whether or not to reject the null hypothesis. Basing himself on Statsoft 1999, Venter (2000: 169) reports that it is the probability of getting a result as extreme or more extreme than that observed if the proposed null hypothesis is correct. Statistical analyses were

carried out on the assumption that the null hypothesis is true. The results of the statistical analysis is compared to the significance level . Where this probability value is equal to or less than the significance level, then the null hypothesis is rejected. On the other hand, where the probability is greater than the significance level, the hypothesis is not rejected. Where the null hypothesis is rejected, the outcome is said to be statistically significant. Where the null hypothesis is not rejected, the outcome is said to be not statistically significant. Where the outcome is statistically significant, the null hypothesis is rejected in favour of the alternate hypothesis (Venter 2000:169). In this case, the null hypothesis is rejected in favour of the alternative hypothesis. The level of significance used in this study is 95%, that is, a P value of 0.05.

As reported by Venter (2000:170), Berenson and Levine identify two types of risks in hypothesis testing, namely Type I and Type II errors. In Type I error, the risk is associated with rejecting a null hypothesis, when it is true. In Type II error, the risk is in accepting a false hypothesis. The power of a statistical test is the probability of rejecting the null hypothesis when it is false, that is, the power of providing a true result. The factors that influence the level of a test are :-

- Some tests are inherently more powerful than others.
- The larger the sample is, the more powerful is the test. The balance is a sample which is large enough, but which is not wasteful.
- The power of a test is related to the size of the experimental effects. In other words, if the null hypothesis is wrong by a substantial amount, then the test is more powerful than if it were wrong by a marginal amount.
- Error of measurement can hide the real experimental effects. Thus, anything that enhances the accuracy and consistency of measurement will enhance the power of the test.

To test the hypothesis, the normal or one way ANOVA has been carried out and the values of F sig. and  $r^2$  established. The 'sig' represents the value of P. Lehmann *et al* (1998:432) explain that in some situations, multiple samples may be available. Therefore in order to see if the samples differ, researchers often prefer to examine the samples simultaneously. The methodology, according to the authors, 'for such examination is essentially an extension of the two-sample t-test known as ANOVA - analysis of variance.' The ANOVA consists of seeing whether the means of the several samples are fair apart relative to the uncertainty to what the means really are. The ANOVA has been performed by using the SPSS 11.0 package.

The levels of significance or the P value identified by the F-test indicate the risk associated in rejecting the null hypothesis. For example, if the value of P is less than 0.05, then there is less than 5% chance that the decision to reject a null hypothesis is wrong. The r square values give a pretty good description of how the dependent variable is related to the independent variable.

#### **4.14 THE SUSTAINABILITY OF HYPOTHESIS TESTING**

It is important that data generated by a survey are reliable and valid for the survey results to be of use. Validity is the extent to which the instrument used to gather data has tested what was originally planned. Venter (2000: 164) reports four categories of validity from Statsoft 1999. These are :-

- Conclusive validity which is the relationship in a particular study between two tested variables.
- Internal validity which is the existence of a causal relationship in the event that a relationship exists in a study.
- Construct validity which assumes that there is a causal relationship in the study and establishes whether the programme reflects well the

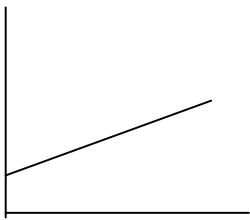
construct of the programme and whether the measure reflects well the idea of the construct of the measure.

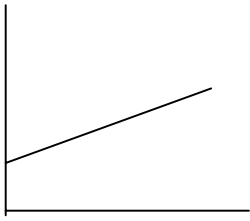
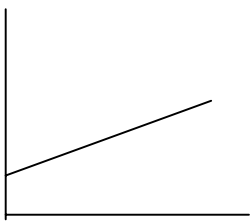

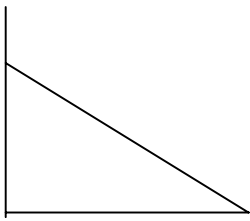
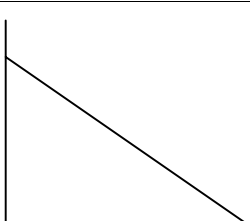
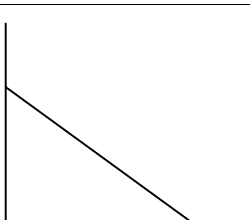
- External validity which establishes whether the effect can be generalized in the event of a causal relationship in the study between the constructs of the cause and the effect.

Reliability is the extent to which the results of the survey would be duplicated in similar surveys. In other words, reliability refers to the extent that a measurement reflects mostly the true score.

The hypotheses tested are stated in null form and are contained in the next section. The F-tests were performed to determine whether the hypotheses could be supported. The next step was to establish whether the hypotheses were strong enough to be reliable. For that purpose, reference was made to Lehmann *et al* (1997: 470) and the regression analysis and tests on  $r$  were carried out. According to the authors, the correlation coefficient is an index of the fit between the predicted and the actual values of the dependent variable. A value of +1 indicates perfect correlation, meaning that  $x$  is a perfect predictor of  $y$ . A value of zero indicates no correlation between  $x$  and  $y$ . A value between 0 and +1 indicates somewhere between no and perfect correlation. These are shown in table 4.2.

**Figure 4.2 Correlations and Regression Lines**

<i>Plot of Points</i>	<i>Regression coefficient</i>	<i>Standard error of estimate</i>	<i>Correlation</i>
	<b>Positive</b>	<b>0</b>	<b>+1.0</b>

<i>Plot of Points</i>	<i>Regression coefficient</i>	<i>Standard error of estimate</i>	<i>Correlation</i>
	<b>Positive</b>	<b>Small</b>	<b>.95</b>
	<b>Positive</b>	<b>Large</b>	<b>.20</b>
	<b>0</b>	<b>“very” large</b>	<b>0</b>
	<b>Negative</b>	<b>Large</b>	<b>-.20</b>
	<b>Negative</b>	<b>Small</b>	<b>-.95</b>
	<b>Negative</b>	<b>0</b>	<b>-1.0</b>

**Source: Lehmann et al (1998: 470)**

According to the same authors, the value of  $r^2$  which is the coefficient determination, is the percent of the variance in the values of  $y$  accounted for or predictable by the variance in  $x$ . Therefore an  $r$  of 0.7 means an  $r^2$  of 0.49. This in turn indicates that about half the variable in  $y$  is accounted for by variance in  $x$ .

#### **4.15 SETTING HYPOTHESES**

The research attempts at collecting facts about domestic water consumers in Mauritius, test hypotheses, develop theories and produce a model. The descriptive data produced by the research has been useful in this process. The exploratory variables used are those commonly employed in this type of research. These include socio-economic–demographic characteristics, selected attitudes and opinions of domestic water consumers.

With the stated objective in mind, various hypotheses have been suggested, followed by a discussion of these hypotheses and their justification. A hypothesis is a tentative statement of relationship between two or more variables. Hypotheses are of two types, namely, passive (null) or aggressive. A passive (null) hypothesis contains no contradiction between the asserted and the sample figure, that is, between the asserted parameter and the sample statistic, and that the difference can, therefore, be ascribed solely to chance (Harper, 1991: 307). In the aggressive hypothesis, there is contradiction between the asserted and the sample figure. The purpose of testing the null hypothesis is to see whether it can be rejected or not. In the present study, the hypotheses are stated in null form.

In formulating the hypotheses, due consideration has been given to the local context and its people, and to factors such as supplier's stimuli, cultures, reference groups, family, individual characteristics, social influences and situational characteristics. The literature review and the models of consumer behaviour discussed in chapters 2 and 3 have been equally considered. Thus,



the hypotheses contains the variables of the sample, namely, ethnic groups, occupational groups and residential areas. Age and level of education have been introduced in some of the hypotheses and size of family is mentioned in one instance. The variables are considered independently for accuracy of analytical results.

The hypotheses are as follows:-

### **Hypothesis H01**

The first hypothesis reads as below:-

The consumer's involvement in the decision process to acquire a domestic water supply as being easy is not related to:

- ethnic groups
- occupational groups
- urban/rural regions
- age
- level of education

Hypothesis H01 refers to the decision-making process of the consumer to acquire a domestic water supply in Mauritius. This process is contained in field four of the Nicosia model and is motivated by the results of the search evaluation and of means and ends (fig. 3.1 p. 119). In the Howard and Seth model, the decision-making process is influenced by significative and symbolic stimuli, that is, quality, price, distinctiveness, service and availability and by social stimuli, that is, family, reference groups and social class (fig. 3.2 p. 122). These three groups of stimuli influence the consumer's attention, perception, attitude, intention and finally the purchase by him. In the Engel-Blackwell model, the decision-making process is influenced by the input stimuli which are marketer dominated and by external factors which include cultural norms and values, reference groups/family and unanticipated circumstances (fig. 3.3 p. 125). Both

the input stimuli and external factors combine to create motives, intentions, attitudes, beliefs, choice and outcome. In the Engel-Blackwell-Miniard model, the decision-making process is influenced by the input stimuli dominated by the marketer and by variables such as individual characteristics, social influences and situational factors. All these contribute to create beliefs, attitude, intention which ultimately result in the actual purchase (fig. 3.4 p.129). In the integrated model, the inputs, namely, the firm's attributes, the product attributes, the social environment and the decision variables, namely, the individual characteristics, the social factors, the situational factors, the evaluation criteria, motive and intention contribute towards the decision-making by the consumer (fig. 3.7 p. 166).

The degree of involvement of the consumer in his decision-making reflects the complexity of the problem and the consumer's problem-solving behaviour. This aspect can be perceived in the means-ends evaluation in the Nicosia model. In the Howard and Seth model, this is apparent in the stimuli ambiguity in the perceptual construct. The Engel-Blackwell model and the Engel-Blackwell-Miniard model outline a series of activities which a consumer may undertake under high involvement conditions. In the integrated model, the complexity of the problem is seen in the processes leading to the decision-making process and in the decision.

## **Hypothesis H02**

The volume of domestic water consumption in Mauritius is not related to :-

- ethnic groups
- occupational groups
- urban/rural regions
- size of family
- opinion on price of water

### **Hypothesis H03**

The water related needs of domestic consumers in Mauritius being met by the supply of water are not related to:-

- ethnic groups
- occupational groups
- urban/rural regions

Hypotheses H02 and H03 are devoted to consumption of domestic water in Mauritius and are expected to reveal much about the consumer. The consumption process is present in all the four models. It is seen in field four of the Nicosia model as 'consumption storage'. This 'consumption storage' is the consequence of and is influenced by the search evaluation process and the decision, which is the act of purchase. In the Howard and Seth model, 'satisfaction' in the learning construct is a consequence of consumption which follows purchase. Satisfaction as an outcome of consumption is influenced by significative, symbolic and social input stimuli and by outputs which include attention, attitude, intention and purchase. In the Engel-Blackwell model, consumption results in dissonance or satisfaction of needs. This consumption which follows choice is influenced by input stimuli which are marketer dominated and by external influences which include cultural norms and values, reference groups /family and unanticipated circumstances. In the Engel-Blackwell-Miniard model, consumption again leads to dissatisfaction or satisfaction of needs. These are influenced by marketer dominated stimuli in the form of input and by variables like individual characteristics, social influences and situational factors. In the integrated model, the outcomes of consumption follow choice/purchase. These outcomes are satisfaction/dissatisfaction.

In the formulation of the hypotheses, consideration has been given to the local environment, supplier dominated variables, individual characteristics, social

and cultural aspects, reference group, family and situations proper to the consumer.

#### **Hypothesis H04**

The perception of domestic consumers in Mauritius on volume of water supplied to them as being sufficient is not related to :

- ethnic groups
- occupational groups
- urban/rural regions
- age
- level of education

Hypothesis H04 deals with the supply of water as perceived by the domestic consumers in Mauritius. This aspect is directly related to the consumer's 'experience' in the Nicosia model and is responsible for 'attitude' formation in the Howard and Seth model. In both the Engel-Blackwell model and in the Engel-Blackwell-Miniard model, this perception leads to attitude formation. External factors like cultural norms and values affect perception. In the integrated model, the perception of the consumer on the product and service is reflected in his attitude, belief and intention as regards the product and service.

#### **Hypothesis H05**

The drinking quality of water perceived by domestic consumers is in Mauritius as being good is not related to:

- ethnic groups
- occupational groups
- urban/rural regions
- age
- level of education

The quality of a product along with individual, social and environmental factors are important elements in the study of consumer behaviour. These aspects are contained in the models that have been reviewed. 'Experience' following consumption determines the consumer's predisposition for a product in the Nicosia model. In the Howard and Seth model, satisfaction with a product determines attitude formation and confidence in the consumer. In the Engel-Blackwell model, satisfaction leads to attitude formation, belief and intention, while dissatisfaction leads to further external search. The same process is seen in the Engel-Blackwell-Miniard model. In the integrated model, satisfaction consolidates beliefs, attitudes and intentions towards a product.; while dissatisfaction prompts the consumer towards external search.

### **Hypothesis H06**

The domestic consumer's willingness to pay more for a better service in Mauritius is not related to:

- ethnic groups
- occupational groups
- urban/rural regions
- age
- level of education

### **Hypothesis H07**

The domestic consumer's willingness to pay more for a better quality of drinking water in Mauritius is not related to:-

- ethnic groups
- occupational groups
- urban/rural regions
- age
- level of education

Hypotheses H06 and H07 are related to the willingness to pay more for a better service and for a better product. This aspect of price is seen in the evaluation of means-ends in the Nicosia model. In the Howard and Seth model, price is specifically present in inputs stimulus display of significant and of symbolic kinds and in the choice criteria. In the Engel-Blackwell model, the element of price is apparent in the evaluation criteria. In the Engel-Blackwell-Miniard model, price is present in the evaluation process. In the integrated model, the elements of price is implied in the evaluation process and in the evaluation criteria.

### **Hypothesis H08**

The consumption of bottled water in Mauritius is not related to:

- ethnic groups
- occupational groups
- urban/rural regions
- age
- level of education

Hypothesis H08 refers to the consumption of bottled water. In the case of Mauritius, the alternative to domestic tap water is bottled water available on the market. Individual, social, situational and economic factors, quality of water and alternative evaluation are likely to influence the consumption of bottled water in Mauritius. Alternative evaluation is seen in all the models that have been discussed. In the Nicosia model, the consumer makes an evaluation of means and ends. In the Howard and Seth model, alternative evaluation is seen in 'choice criteria' and in 'attitude' in the learning construct. In the Engel-Blackwell model and in the Engel-Blackwell-Miniard model, alternative evaluation is clearly mentioned in the decision process stage. In the integrated model, evaluation of alternatives take place in the evaluation process.

### **Hypothesis H09**

The manner in which consumer's complaints are dealt with by the CWA employees in Mauritius is not related to:-

- ethnic groups
- occupational groups
- urban/rural regions

Hypothesis H09 is devoted to the consumer's complaint. This aspect reveals the post-purchase behaviour and emanates from dissatisfaction. This is seen in the consumer's experience and feedback in the Nicosia model. In the Howard and Seth model, post-consumption behaviour when qualified as satisfaction leads to confidence and attitude formation. This means that dissatisfaction/dissonance is responsible for lack of confidence and/or negative attitude. In the Engel-Blackwell model, the consumer engages in external search in case of dissonance. The same applies in the Engel-Blackwell-Miniard model. This is also the case in the integrated model. In case of dissatisfaction, consumers engage in external search. In the integrated model, complaints are implied to emanate from the consumer's dissatisfaction.

### **Hypothesis H010**

The perception of domestic consumers on volume of water generally provided in Mauritius by the CWA is not related to:

- ethnic groups
- occupational groups
- urban/rural regions
- age
- level of education

Hypotheses H010 reflects much on the supplier and the consumer. It is a logical sequence of the previous hypotheses. The consumer's perception of the product and of the supplier determines his consumer behaviour. In the Nicosia model, the consumer's perception emanates from his 'experience' in field four. In the Howard and Seth model, the consumer's perception is determined by satisfaction and confidence (and therefore by dissatisfaction and distrust also) in the learning construct. In the Engel-Blackwell model, the consumer's perception, that is, beliefs, attitude and intention, depends on dissonance/satisfaction experienced by him. The same occurs in the Engel-Blackwell-Miniard model. In the integrated model, the consumer's perception on the product and service is seen in the outcome of his decision and consumption. Taking all these factors into consideration, the last hypothesis relating to the domestic consumer and to the supplier of water in Mauritius is formulated as above.

The next step is to explain the survey questionnaire. The questionnaire design and testing have been explained in section 4.9 (p.p. 184-188). The pages that follow are devoted to explaining the contents of the questionnaire. These pages are divided into two from top to facilitate reading and comparison. The left side of the page contains the survey questions and the right side contains the explanations and comments. The models reviewed in chapter 3 are indicated as the four models when referred to collectively.

#### **4.16 THE QUESTIONNAIRE**

The questionnaire aims at achieving the objective of the research. This objective is mentioned at section 1.2 of chapter I (p.3) and again mentioned at section 4.2 of this chapter (p.168). The questionnaire relates to and follows the form of consumer behaviour models discussed in the literature review and assists in supporting or otherwise the hypotheses that have been formulated. The questionnaire is included as Appendix B and C.



**QUESTIONS AND COMMENTS**

<b>Questions</b>	<b>Comments</b>
<b>QUESTION 1</b> <b>HOW LONG HAVE YOU HAD A WATER SUPPLY IN YOUR NAME?</b>	<p>This question is related to the memory of the domestic water consumer. The consumer's memory plays an important role in consumer behaviour. The Nicosia model makes mention of 'message exposure' which has to do with the consumer's memory. The Howard and Seth model contains the input stimulus display, the perceptual constructs, the learning constructs and outputs, all of which refer to the consumer's memory. The role of the memory is clearly depicted in the Engel - Blackwell model and in the Engel-Blackwell-Miniard model and in the integrated model. The research tries to establish the behaviour of domestic water consumers in Mauritius. The question as to how far back in the consumer's memory is it possible to go is explained on pp. 181,182. As stated, it became necessary to survey consumers who had acquired a water supply within a period of twelve months. A maximum period of twelve months is considered reasonable. As further explained on the same page the acquisition of a water supply is meant to fulfill a need.</p> <p>Question 1 establishes the period since when the respondent acquired his water supply. Consumers with water supplies since more than twelve months were not interviewed.</p>

<p><b>QUESTION 2</b></p> <p><b>I APPLIED FOR A WATER SUPPLY BECAUSE: (<i>More than one answer possible</i>)</b></p> <p>2.1 I was having problems with person from whom I was taking water.</p> <p>2.2 I have my own house.</p> <p>2.3 I could afford it.</p> <p>2.4 I wanted a supply of my own like others.</p> <p>2.5 My family and friends requested me to have one.</p>	<p>This question establishes the problem recognition process in the consumer. A consumer recognises a problem when his actual state and his desired state are not congruent. In other words, the consumer has an unfulfilled need. An unfulfilled need resulting in problem recognition is present in all the four models and in the integrated model which have been discussed. Message exposure in the Nicosia model is meant to create a desire i.e. need in the consumer. In the Howard and Seth model, the input stimulus display draws attention and creates motives i.e. need leading to problem recognition, attitude, intention and purchase. In the Engel-Blackwell model, problem recognition occurs within one of the five components of the model, namely, in the decision process. Likewise, in the Engel-Blackwell-Miniard model and in the integrated model, problem recognition occurs within the decision process in the consumer. It is, here, important to remember the distinction between a water supply and water consumption.</p>
<p><b>QUESTIONS 3 AND 4</b></p> <p><b>3. I PROCEEDED AS BELOW IN ORDER TO KNOW WHERE TO APPLY FOR A WATER SUPPLY: (<i>More than one answer possible</i>)</b></p> <p>3.1 I already knew that the CWA was responsible for water supply.</p> <p>3.2 I enquired from the CWA.</p> <p>3.3 I asked my family and friends.</p> <p>3.4 Through Mass Media. (<i>Specify the media</i>)</p> <p><b>4. IT WAS EASY TO FIND OUT WHERE TO APPLY FOR A WATER SUPPLY</b></p>	<p>These two questions probe into the information search by the consumer. Information search is a logical process in consumer behaviour. It is present in all the four models that have been reviewed. In the Nicosia model, information search can be identified by message exposure. In the Howard and Seth model, information search is mentioned as overt search in the perceptual construct. In the Engel-Blackwell model, search for information takes place in the decision process stage; while external search occurs at input stage. In the Engel-Blackwell-Miniard model, both search at decision process stage and external search at input stage take place. It is also noted that Information search follows problem recognition. In the integrated model, internal search takes place at decision-making stage while external search takes place both at decision-making stage and at input stage.</p> <p>Question 3 establishes the information search process by the consumer as regards domestic water supply. Question 4 establishes the complexity of the information search process</p>

<p><b>QUESTION 5</b></p> <p><b>I WAS WELL TREATED BY OFFICERS OF THE CWA WHEN I WENT TO APPLY FOR A WATER SUPPLY.</b></p>	<p>This question has to do with the supplier of water. The question emanates from the firm's attributes contained in the Nicosia model. In the Howard and Seth model, it is related to the service in the significative stimuli and in the symbolic stimuli. In the Engel-Blackwell model, in the Engel-Blackwell-Miniard model and in the integrated model, the question is related to the 'outcomes', which in the process, are responsible for attitude formation. The objective of the CWA is to supply water. In this question, the respondent is required to state the way in which he was treated when he went to apply for a water supply.</p>
<p><b>QUESTION 6</b></p> <p><b>THE MONEY CLAIMED BY THE CWA FOR INSTALLING THE WATER SUPPLY WAS: (Only One answer possible)</b></p> <p>6.1 High 6.2 Reasonable 6.3 Quite Low 6.4 Low</p>	<p>As for any market product or service, the acquisition of a water supply in Mauritius costs money. The money or price aspect is present in all the four models. Consumer behaviour is closely related to affordability. In the Nicosia model, the consumer evaluates the means-ends. In the Howard and Seth model, price is seen in the significative and in the symbolic input stimuli. In the Engel-Blackwell model and in the Engel-Blackwell-Miniard model, price is perceptible in the marketer-dominated stimuli. In the integrated model, price is in the supplier's attributes. In this question, the respondent is required to express his perception of the cost of his water supply.</p>
<p><b>QUESTIONS 7, 8, 9 AND 10</b></p> <p>7. <b>IT WAS EASY TO DECIDE WHETHER TO GO AHEAD FOR THE WATER SUPPLY OR NOT.</b></p> <p>8. <b>DID YOU AT ANY TIME FEEL DISCOURAGED AT GOING AHEAD WITH YOUR APPLICATION FOR A WATER SUPPLY? (Agree/Disagree means YES/NO) (If reply neutral or +ve skip Q.9)</b></p> <p>9. <b>I WAS DISCOURAGED BECAUSE: (More than one reply possible)</b></p> <p>9.1 It was too expensive 9.2 My neighbour did not allow the pipe to go through his premises</p> <p>10. <b>I WAS NOT DISCOURAGED BECAUSE: (More than one reply possible)</b></p> <p>10.1 I could afford it 10.2 It is better to have one's own water supply 10.3 It is better to be like others</p>	<p>These questions try to establish the complexity of the decision-making process by the consumer and his involvement. In the Nicosia model, the complexity of problem-solving can be seen in the consumer at the means-ends evaluation stage. In like manner, this can be perceived in the stimuli ambiguity in the perceptual construct in the Howard and Seth model. This model identifies three stages in buying behaviour, namely, the extended problem-solving behaviour, the limited problem-solving behaviour and the routinised problem-solving behaviour. The Engel-Blackwell model and the Engel-Blackwell-Miniard model make the distinction between high and low involvement in decision-making and problem solving. In the integrated model, the complexity of decision-making is in the evaluation and choice.</p> <p>Questions 7, 8, 9 and 10 try to reply whether the problem faced by the consumer was extended, limited or routine in nature and to establish his involvement.</p>

<p><b>QUESTION 11</b></p> <p><b>11. AFTER MAKING THE APPLICATION FOR WATER SUPPLY, DID YOU SEARCH FOR AN ALTERNATIVE SUPPLY OF WATER e.g. FROM NEIGHBOURS, FAMILY ?</b>  <i>(Agree/Disagree means YES/NO) (If reply neutral or +ve Skip Q.12)</i></p>	<p>This question relates to the process of alternative evaluation by the consumer before deciding on his choice. The alternative of a domestic water supply in Mauritius is for the consumer to share the water supply of his neighbour. Alternative evaluation is present in all the four models, which have been discussed. The integrated model makes mention of evaluation. This question establishes whether the respondent engaged himself in any alternative evaluation.</p>
<p><b>QUESTION 12</b></p> <p><b>I FINALLY DECIDED TO PAY AND HAVE MY OWN WATER SUPPLY BECAUSE: <i>(More than one answer possible)</i></b></p> <p>12.1 I was obliged to have water supply of my own and I had the money.  12.2 I was obliged to have a water supply of my own and I borrowed the money.  12.3 I took the advice of my family and friends.</p>	<p>This question is directly related to the decision-making by the consumer. In the Nicosia model, this process is referred to as decision (action) in field two. In the Howard and Seth model, it is mentioned as purchase in the output stage. In the Engel-Blackwell model, it is known as 'choice' in the decision process, while it is termed 'purchase' in the Engel-Blackwell-Miniard model. In the integrated model, it is shown as choice/purchase. This question allows to know how the respondent finally decided to acquire a water supply.</p>
<p><b>QUESTIONS 13 and 14</b></p> <p><b>13. THE TIME TAKEN BY THE CWA TO INSTALL MY WATER SUPPLY WAS LONG</b></p> <p><b>14. I WOULD ADVISE CONSUMERS WITHOUT A WATER SUPPLY TO HAVE ONE OF THEIR OWN.</b></p>	<p>These two questions refer to the supplier of water in Mauritius. The comments to Question 5 mentioned above are equally relevant to questions 13 and 14. In addition, replies to questions 13 and 14 are indicative of 'experience' and 'feedback' referred to in the Nicosia model. The replies also give a clue to satisfaction, attitude and confidence in the learning construct in the Howard and Seth model. Finally the replies help to establish the 'outcome' contained in the Engel-Blackwell model, in the Engel- Blackwell-Miniard model and in the integrated model. The outcome in these models leads to attitude formation, beliefs and intention.</p>

<p><b>QUESTIONS 15 and 16</b></p> <p><b>15. MY WATER RELATED NEEDS ARE WELL SATISFIED WITH THE SUPPLY OF WATER TO ME.</b></p> <p><b>16. THE VOLUME OF WATER SUPPLIED TO ME IS SUFFICIENT</b></p>	<p>So far the questions were related to the water supply and to the decision-making processes leading to the acquisition of the supply. Questions 15 and 16 are related to the consumption of water. These questions serve as a feedback to the consumer's decision to acquire a water supply and to establish whether or not his needs were satisfied. In the Nicosia model, replies to the questions would depend on 'experience' and would be in field four which is 'feedback'. In the Howard and Seth model, the replies would depend on satisfaction. It would also indicate 'availability' of the product, which is in the significative and symbolic input stimuli in this model. In the Engel-Blackwell model, in the Engel- Blackwell -Miniard model and in the integrated model, the reply would depend on dissonance/dissatisfaction or satisfaction of the consumer.</p>
<p><b>QUESTION 17</b></p> <p><b>17. THE DOMESTIC WATER TARIFF IN MAURITIUS: <i>(Only One reply to be given)</i></b></p> <p>17.1 Is high 17.2 Is reasonable 17.3 Is quite low 17.4 Is low</p>	<p>This question reveals the perception of the respondent on the domestic water tariff. Comments to Question 6 are also relevant to this question. The element of price is present in all the four models. Price, to a large extent, influences consumer behaviour and the decision-making process. In the case of domestic water in Mauritius, even if, consumers cannot forego this commodity, price certainly influences the consumer as regards the volume used beyond what is required for basic needs. Reply to this question is equally important in relation to some other questions, for example, question 19 on willingness to pay more.</p>
<p><b>QUESTION 18</b></p> <p><b>18. THE DRINKING QUALITY OF WATER SUPPLIED TO ME IS GOOD.</b></p>	<p>This question establishes the drinking quality of water as perceived by the respondent. This criterion is an important factor responsible for consumer behaviour. In the Nicosia model, quality may be seen to impact on experience and feedback. In the Howard and Seth model, quality is a criterion in the significative and the in symbolic input stimuli. In the Engel-Blackwell model and in the Engel- Blackwell-Miniard model and in the integrated model, quality is established as an outcome by the consumer. Reply to this question has a bearing on the alternative which is bottled water.</p>

<p><b>QUESTION 19</b></p> <p>19. <b>I ACCEPT TO PAY A HIGHER TARIFF:</b></p> <p>19.1 For a better service</p> <p>19.2 For a better quality of water</p>	<p>Replies of the respondents to this question may be related to replies to some other questions, for example, to those of question 6. Comments to question 6 also apply here. The question tries to establish whether the respondent is willing to pay more for a better service and for a better quality of water. The reply would have a bearing on the consumption of bottled water as an alternative to tap water and would reveal much about the services provided by the CWA in Mauritius.</p>
<p><b>QUESTIONS 20, 21 and 22</b></p> <p>20. <b>THE FREQUENCY WITH WHICH I CONSUME BOTTLED WATER IS AS BELOW: (Only One reply required)</b></p> <p>20.1 Very Often (If 20.1, 20.2 and 20.3 Skip to Q 21)</p> <p>20.2 Often</p> <p>20.3 Occasionally</p> <p>20.4 Never (If reply 20.4 skip to Q.22)</p> <p>21. <b>I CONSUME BOTTLED WATER: (More than one answer possible)</b></p> <p>21.1 Because of lack of confidence in quality of CWA water.</p> <p>21.2 Because people like me consume bottled water (status).</p> <p>21.3 Because I can afford it.</p> <p>21.4 Because it is convenient.</p>	<p>All the four models of consumer behaviour which have been reviewed and the integrated model contain information search and alternative evaluation. In the Nicosia model, it is seen in the evaluation of means and ends. In the Howard and Seth model, alternative evaluation is seen in attention in the perceptual construct. In the learning construct, it is seen in the choice criteria, attitude and intention. In the Engel-Blackwell model and in the Engel-Blackwell-Miniard model, alternative evaluation is clearly mentioned in the decision process stage. In the integrated model, alternative evaluation takes place at evaluation stage. In Mauritius, the alternative to domestic tap water is bottled water. Questions 20, 21 and 22 try to establish the decision-making process and consumption or otherwise of bottled water by the consumer.</p>
<p>22. <b>I DO NOT CONSUME BOTTLED WATER: (More than one answer possible)</b></p> <p>22.1 Because the quality of CWA water is acceptable to me.</p> <p>22.2 Because bottled water is an artificial mark of status.</p> <p>22.3 Because people like me cannot afford it.</p> <p>22.4 Because it serves no especial purpose to me.</p>	

<p><b>QUESTIONS 23, 24, 25 AND 26</b></p> <p>23. <b>I HAVE COMPLAINED TO THE CWA IN THE PAST</b> (<i>If disagree Skip Q.24</i>)</p> <p>24.</p> <p>24.1 Because my bill was excessive.  24.2 Because the water supply was insufficient.  24.3 Because the pipe at my place was broken.  24.4 Because of a broken pipe on the road.  24.5 Because I felt my meter was defective.  24.6 Because I was not satisfied with the employees of the CWA.</p> <p>25. <b>ON THE WHOLE, MY COMPLAINT WAS DEALT WITH EFFICIENTLY.</b></p> <p>26. <b>THE TIME TAKEN TO FINALISE MY COMPLAINT WAS ACCEPTABLE</b></p>	<p>These questions refer to the post-consumption behaviour of the respondents. They relate to consumer complaints and to complaints handling by the supplier. Consumer dissatisfaction is seen in the experience undergone by the consumer and in feedback in the Nicosia model. In the Howard and Seth model, the outcome of the purchase is seen in satisfaction/dissatisfaction following the purchase. In the Engel-Blackwell model, dissatisfaction is characterised as dissonance in the post-consumption stage. In the Engel-Blackwell-Miniard model and in the integrated model, consumer dissatisfaction is shown as an outcome in the post-consumption stage. Replies to these questions establish consumer behaviour during the post-consumption stage and at the same time reveal much about the supplier.</p>
<p><b>QUESTIONS 27 AND 28</b></p> <p>27. <b>CWA EMPLOYEES ARE:</b></p> <p>27.1 Courteous  27.2 Helpful  27.3 Knowledgeable</p> <p>28. <b>AS REGARDS THE CWA IN GENERAL:</b></p> <p>28.1 The volume of water supplied by it is sufficient  28.2 The service provided by it is good</p>	<p>These questions establish the perception of the respondent on the supply and service of water in Mauritius. The replies to the questions are indicative of the success of the firm's attributes mentioned in the Nicosia model. The replies would also indicate how well the significant stimuli input and the symbolic stimuli input contained in the Howard and Seth model are displayed by the supplier. The replies would reveal how well the marketer dominated stimuli contained in the Engel-Blackwell model and in the Engel-Blackwell-Miniard model are fulfilled by the supplier and how good the supplier's attributes in the integrated model are in the consumer's perception. Finally, the replies would reveal the dissatisfaction/satisfaction experienced by the respondent in the post-consumption stage.</p>
<p><b>QUESTIONS 29 AND 30</b></p> <p>26. <b>DO YOU STORE WATER AT YOUR HOME ?</b> (<i>If NO, Skip Q 30</i>)</p> <p>30. <b>HOW DO YOU STORE WATER ?</b></p> <p>In a ground/overhead tank  In containers  Others(Specify)  .....</p>	<p>This question reveals a particular facet of consumer behaviour, as regards domestic water, namely, storage of water at one's place. This storage aspect is specifically contained in the Nicosia model and is apparent in the other models as an extension of consumption. Storage of goods for consumption purposes is an integral part of consumer behaviour.</p>

<p><b>QUESTIONS 31 AND 32</b></p> <p>31. <b>WHAT IS YOUR AVERAGE WATER BILL PER MONTH?</b></p> <p>32. <b>AVERAGE CONSUMPTION PER MONTH ?</b></p>	<p>These questions collect information about the amount of water charges paid by the respondent per month and his monthly water consumption. Both questions are inter-related and may have bearing on replies to some other questions. Quantity consumed or to be consumed has direct relationship on purchase and on consumption and ultimately result in satisfaction/dissatisfaction in the four models, which have been discussed and in the integrated model.</p>
<p><b>QUESTION 33</b></p> <p>33. <b>NO. OF PERSONS USING THE SUPPLY AT YOUR HOME? (Fill in Box)</b></p>	<p>The reply to this question is factual and establishes the number of persons using the water supply. The question is also connected to questions 31 and 32. The analysis of the replies would allow to see whether these can be related to those of some other questions and, thus, have a clearer idea of domestic water consumption in Mauritius.</p>
<p><b>QUESTION 34</b></p> <p>34. <b>DO YOU NORMALLY PAY YOUR WATER BILLS WITHIN THE STATUTORY DELAY OF SIXTY (60) DAYS ?</b></p> <p>1. YES 2. NO</p>	<p>This question establishes whether domestic water consumers in Mauritius pay their water bills in time. In all the four models and in the integrated model, the payment for the goods or services purchased is in the act of the purchase itself. In Mauritius, water bills are delivered to the consumer one month in arrears, that is, after the consumption. Reply to this question would reveal another facet of consumer behaviour in Mauritius.</p>
<p><b>QUESTIONS 35 TO 43</b></p> <p>35. <b>RESIDENTIAL AREA ?</b></p> <p>36. <b>RELIGION/ETHNIC GROUP ?</b></p> <p>37. <b>AGE OF RESPONDENT ? (Years)</b></p> <p>38. <b>LEVEL OF EDUCATION ATTENDED ?</b></p> <p>39. <b>CAPACITY IN WHICH EMPLOYED ?</b></p> <p>40. <b>INCOME PER MONTH (IF POSSIBLE) ?</b></p> <p>41. <b>ACCOUNT NO. OF WATER BILL</b>  <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>  <b>(9 Fields)</b></p> <p>42. <b>NAME (If possible):</b>  .....</p> <p>43. <b>ADDRESS:</b> .....  <b>TEL. NO.</b> .....</p>	<p>These questions allow to gather socio-economic, cultural and demographic data about respondents. Questions 35,36 and 39 particularly contain some of the evaluation criteria. Replies to these questions allow statistical analyses to be carried out.</p>



#### **4.17 POTENTIAL WEAKNESS OR BIAS OF THE RESEARCH**

The research did meet with some difficulties. Every effort was applied to overcome those difficulties as far as possible.

Some people by their nature are unwilling to disclose information which concern them. This characteristic was noted in some respondents. It took quite some time to convince these respondents and to get the survey questionnaire completed.

Extra effort was required for the interview of the respondents who had attended the primary school education only. They took time to understand the survey questionnaire. It had to be ascertained that they understood each question well before proceeding with their interview.

Some respondents were unable to differentiate between a consumer survey for academic purpose and an official enquiry. The confidence had therefore to be created in them. They had to be convinced that the interview was not going to lead to any action by any Government department including the police.

The aim of the consumer survey was to secure hundred percent response. This meant calling on some respondents more than once.

A larger sample of consumers for the survey would have been preferred. However, this was not possible for practical reasons.

Finally, time was another constraining element for the research. The constraint was minimised by giving priority to the research.

#### **4.18 CONCLUSION**

This chapter has outlined the research objective and methodology. It explains the research design and the need for a consumer survey. It gives a brief of the population of interest and discusses the sampling techniques, the sampling criteria and the sample. The design of both the English and the Kreole versions of the questionnaire has been outlined and discussed. In addition, the English version of the questionnaire has been explained. The hypotheses formulated have a direct linkage to the literature survey and to the Mauritian consumer environment. The replies to the questionnaire go a long way in achieving the objectives of the research, in supporting or otherwise the hypotheses and in developing a consumer behaviour model as regards domestic water consumption in Mauritius. The next chapter 5 gives the research findings. The model is developed in Chapter 6.

## **CHAPTER 5**

### **RESEARCH FINDINGS AND DISCUSSIONS**

#### **5.1 INTRODUCTION**

The previous chapter outlined the objective of and the methodology used for the research. This chapter provides an overview of the information collected, a description of the analytical techniques employed, the accompanying statistical analysis and the resulting research findings. These findings serve to clarify the problem areas mentioned in section 4.2 (p. 168). The findings of the consumer survey and the results of the hypothesis testing are discussed in the light of the literature review. These discussions take into consideration the models of consumer behaviour discussed in chapter 3. A model of consumer behaviour based on the research findings have been developed in chapter 6 in respect of domestic water consumption in Mauritius.

#### **5.2 QUALITATIVE RESEARCH RESULTS**

Qualitative research was conducted by means of discussion by focus groups ( pp. 172-175). The focus groups and the conduct of the interview are described in section 4.5 on p.175. Two focus groups each of eight consumers were constituted. The focus groups were equally composed of urban and rural consumers and they came from different walks of life. Discussion guide used for qualitative discussions with the focus groups is at appendix E. Questions referred to in this section mean questions contained in the discussion guide at appendix E. The author fulfilled the role of moderator.

##### **5.2.1 Water Supply to Urban and Rural Areas in Mauritius**

This item relates to question 1 of the discussion guide at appendix E. The focus groups were unanimous that water supply in urban areas was better than

that in rural areas. Urban areas generally had a twenty-four hour supply which was not the case in certain villages. The groups stated that through time urban and sub-urban areas had been given priority as regards water supply development. One reason for this was the large number of residents in these areas. The groups also observed that infrastructural works in rural areas was expected to cost relatively more as the villages were quite distant from each other. The focus groups acknowledged that the country had progressed in water supply development during the two last decades; but felt that priority had to be given to provide villages with continuous water supply where it did not exist.

### **5.2.2 A Water Connection for Each Home**

Discussion on this item revolved around question 2 of the discussion guide at appendix E. The focus groups wished that each home has its water connection. It averred from the discussions that lack of finance prevented some consumers to acquire a water connection. One member of the group stated that squatters at Belle Mare and at Mare du Puit were paying exorbitant rates to buy water from other consumers. Such a phenomenon could apply to any consumer without a water connection. The feeling expressed by members of the focus groups towards those without a water connection and towards squatters on state lands was that of sympathy. The living conditions of these people were due to poverty for which they could not be blamed. The members commented on the miseries undergone by these people and pointed out that absence of water supply was an important item which increased their miseries. One member stressed that the health of the family depended on safe and adequate drinking water. Still another member said that water was a God-given gift and that it should be available at a very nominal price. On the suggestion of a few members, the focus groups agreed that some form of payment facility should be granted to the needy in order to enable them to acquire a water connection.

### **5.2.3 Was it Easy to Have A Water Connection?**

This item related to question 3. The focus groups examined the question taking into consideration the time taken and the money required to have a water connection. The groups felt that the CWA took too long to grant water connections. At times, the delay extended from three to six months. On this count, the groups expressed the feeling that the efficiency of the supplier was below consumer expectation. Another difficulty faced by some potential subscribers was securing the money required to pay fully for a water connection.

### **5.2.4 The Cost of A Water Connection**

With reference to question 4, the opinion of the focus groups on the cost of a water connection in Mauritius was divided. A minority of the members felt that the water connection cost was reasonable; while for the others it was on the high side. One member of the group explained that the connection cost was a down payment which was to be followed by monthly payment of water charges for ever by the consumer and his heirs until the supply would continue to exist. He suggested that the water connection could be effected without any payment. This would at the same time encourage people to have a water connection. The other members found the idea to be wonderful and unanimously supported it.

### **5.2.5 Price of Domestic Water for Mauritius**

Discussion on price of domestic water in Mauritius was based on question 5. A minority of the members found the price to be reasonable; whereas the others qualified it as high. The groups observed that opinion on price of a product generally depended on the ability to pay. The groups felt that water was a vital commodity of basic necessity. Consequently, the price had to be within reach of all segments of society. In that context, the groups believed that the vulnerable segments of society needed special consideration.

### **5.2.6 Knowledge About CWA**

This item is related to question 6. The respondents were required to say what they knew about the CWA and how people come to know about it. One member said that he was reminded of the CWA when the Meter Reader called his place to deliver the monthly water bill. Some members agreed with him. Some members said they were already aware that the CWA was responsible for the supply of water in the country. Discussion revealed that all members were in one way or other aware that the CWA was responsible for water supply. Discussions further revealed that people come to know about CWA when they saw the Meter Readers around, when they saw CWA workers repairing leaks or laying pipes, when they went by CWA Offices and water supply projects and when they came across CWA communiqués in the papers, on the radio and television.

### **5.2.7 Drinking Quality of Water in Mauritius**

Discussions related to question 7. Most of the members of the focus groups agreed that the drinking quality of water in Mauritius was good. One member stated that he had, although very rarely, noticed muddy water flowing from his tap. Two of the members expressed reservations on the drinking quality of water and added that they often consumed bottled water. These two members had a higher educational background and were therefore higher on the social ladder. Some of the members stated that bottled water was convenient for sick people and while travelling.

### **5.2.8 Effect of Religion and Culture on the Behaviour of Domestic Water Consumers in Mauritius**

The focus groups were invited to discuss on question 8. The members of the groups were unanimous that religion and culture could not affect the consumption of domestic water in Mauritius. However, they were unanimous that

usage of water was high during religious festivals due to cleaning of houses. They explained that it was the custom in every religion and culture in Mauritius to thoroughly clean and embellish one's premises prior to religious festivals.

### **5.2.9 Factors Influencing Behaviour of Domestic Water Consumer**

Discussions took place as a result of question 9. Members expressed the view that in the local context, factors likely to influence the behaviour of domestic water consumers were adequacy of water supply, affordability, occupation and income, residential area, level of education, size of family, age of consumer and price of water.

### **5.2.10 Opinion on CWA Workers**

In line with question 10, most members of the focus groups expressed satisfaction as regards CWA workers, while some of them expressed reservation on the issue. One member stated that CWA employees had civil servant mentality and were therefore bureaucratic. Another member went as far as saying that workers repairing leaks had the tendency of delaying work in order to benefit from overtime allowance. He added that control was required in order to ensure productivity and efficiency in order to better serve customers.

### **5.2.11 Customer Care in CWA**

Discussion took place in line with question 11. The focus groups were unanimous on two points. Firstly, they felt that there was room for the improvement of customer care in CWA. Secondly, they expressed appreciation as regards those CWA employees who were dedicated in their work. One member stated that the CWA should adopt a holistic approach as regards its service to the consumer. Members of the focus groups observed that phone calls were not well replied, supply of water was interrupted at very short or at no notice,

service was not always prompt and efficient, and complaints were not handled properly.

#### **5.2.12 CWA Telephone Number 170**

In line with question 12, the focus groups were required to say whether they were aware of telephone number 170. About half the focus groups were not aware that '170' was the telephone number for quick access to the CWA twenty four hours Hot Line Service. Those who were aware of it stated that the Hot Line Service was not quick at replying to callers outside office hours. Some members expressed the feeling that actions required following calls to the telephone number 170 was not always prompt and satisfying.

#### **5.2.13 Is there wastage by CWA ? If yes, what is your attitude towards it?**

The focus groups discussed lengthily on question 13. Members of the groups were unanimous that wastage by CWA did exist. By way of examples they quoted water losses through leakages in pipes, poor workmanship, inefficient performance of workers, under-utilisation of plants, and equipment, abuse of vehicles. They stressed that consumers were the payers of such wastage.

#### **5.2.14 Supplier's Efficiency And Consumer's Satisfaction**

Discussion was based on question 14. Two of the members of the groups stressed to the others that the supplier, that is the CWA, was a state-owned organisation. Consequently, consumers had a say in its management. The members agreed that CWA was to varying degrees able to provide water and service in the country. Even if water supply was deficient in certain areas, the groups felt that people were somehow able to fulfill their water-related needs.



According to them, a continuous supply was necessary to meet consumers' expectation. As regards the supplier's efficiency, members of the focus groups felt that the CWA should increase its efficiency both in office and on site. According to them, consumers and consumer satisfaction had to be given priority.

#### **5.2.15 Advice to the Supplier of Water and to Its Workers**

Question 15 served as an epilogue to the focus groups discussions. One member said that work was a form of prayer and service to the community was a source of satisfaction. The focus groups advised workers that it was much better to internalise higher values and to aim at living an ideal life. In that respect, working diligently and with fidelity, and serving consumers and the community were some of the ideals workers should aim at. As regards the supplier of water in Mauritius, the focus groups concluded that it should live up to its responsibility and up to the satisfaction and expectation of consumers.

#### **5.2.16 Conclusions of Qualitative Research**

Based on the qualitative research, the following may be concluded -

- Water supply needed improvement in villages and certain suburban areas which did not benefit from a continuous supply.
- The guiding philosophy should be a water connection for each home. In that context, the needy and the vulnerable segment of the society should be given facilities to pay the connection costs over a reasonable period of time. In addition, consideration should be given to connect the water supply without any connection charge based on the reasoning the consumer and his heirs would be required to pay the monthly water charges for ever.
- Consumers were not satisfied with the delay in giving them a water connection.

- The water connection charges were considered to be on the high side.
- The domestic water tariff was considered to be to be high. Special attention had to be given to the vulnerable groups of society.
- People in Mauritius were generally aware of the supplier of water.
- The drinking quality of water in Mauritius was generally considered as good.
- Religion and culture had no influence on the consumption of domestic water in Mauritius.
- The domestic water consumption was high on such occasions as holy festivals in Mauritius.
- Factors likely to influence the consumption of domestic water in Mauritius were availability of water, residential area, affordability, occupation, income, age, level of education, size of family and price of water.
- Perception of consumers on CWA depended on the behaviour of its workers at work. Improvement was required in that context.
- Customer care was not adequate for meeting customer satisfaction. Improvement was required
- The Mauritian public was not well aware of the existence of telephone number '170' which pertained to the twenty-four hours Hot Line Service of the CWA. That service was also not providing that level of service as expected by consumers. Improvement was required in that context. Improvement was also required on actions following calls to the twenty-four hour Hot Line Service.
- Wastage by CWA existed by way of leakage of water through water network, poor workmanship, inefficient performance, under-utilisation of plants and equipment and misuse of vehicles.

- Supply of water and of service related thereto were somehow accessible to the Mauritian population, but improvement was still required both in offices and on sites. The country needed a continuous water supply at an affordable price.
- The workers had to be guided by higher human values at work and the supplier of water in Mauritius had to live up to its responsibility in its service to the society and to the country.

The next step is to devoted to the findings of the quantitative research.

### **5.3 QUANTITATIVE RESEARCH RESULTS**

Besides qualitative research, quantitative research was carried out in line with the research strategy (p. 172) to fulfill the objective of the research. This chapter further contains the quantitative research findings of the study.

#### **5.3.1 How to read the tables**

Quantitative findings and discussions thereon are supplemented by statistical tables. These tables where applicable have to be read as below:-

- (i) For socio-economic-demographic profile of the respondents, the tables contain the items concerned, for example, religion, the number of respondents and the percentage of respondents. The tables are supplemented by graphical presentations. Tables 5.1 and figure 5.1 serve as examples (p. 225).
- (ii) For data gathered through the consumer survey, the statistical tables indicate the question numbers and the questions of the questionnaire. The tables give the number of respondents, the percentage of respondents and the cumulative number of respondents where applicable. The tables are supplemented by graphical presentations. Table 5.11 and figure 5.10 are examples (p. 242).

- (iii) Data generated by the consumer survey have also been analysed through crosstabulations. The tables are supplemented by figures. Table 5.12 and figure 5.11 serve as examples (p. 243). The crosstabulations indicate the two items that are compared and the number and percentage of respondents.

## **5.4 THE RESPONDENTS**

The survey concerns only those consumers who had a water supply installed in the recent past. It is important to distinguish between a water supply which refers to the infrastructure and water consumption. The respondents were chosen from the list of CWA domestic consumers who had a water supply during the year 2002 in order to ensure that they would be able to recollect information and reply to the questionnaire. The consumer's memory is a key element in the study of consumer behaviour. In the Nicosia model, 'message exposure' in sub-field one has to do with the consumer's memory (section 3.2.1 p. 118). The memory's role can be further perceived in field four in 'feedback' and in 'experience'. The Howard and Seth model makes mention of the input stimulus display, the perceptual constructs, the learning constructs and outputs, all of which have to do with the memory (section 3.2.2 p. 120). The role of the 'memory' is well specified in both the Engel-Blackwell model and in the Engel-Blackwell-Miniard model (sections 3.2.3 and 3.2.4, pp. 122, 126). These models generally agree on the memory function of the consumer. Memory is further depicted in the integrated model (fig. 3.7 p. 166).

As mentioned before, the survey involves some 220 respondents who had a water supply installed at their premises during 2002. The respondents were asked to answer 43 questions believed to be pertinent to the aim of the study. Part of the responses obtained was used to evaluate the legitimacy of the hypotheses formulated in section 4.15 (p. 196).

#### 5.4.1 SOCIO-ECONOMIC-DEMOGRAPHIC BACKGROUND OF RESPONDENTS

The socio-economic-demographic background of the respondents as established by the sampling criteria and as revealed by the consumer survey is given below :-

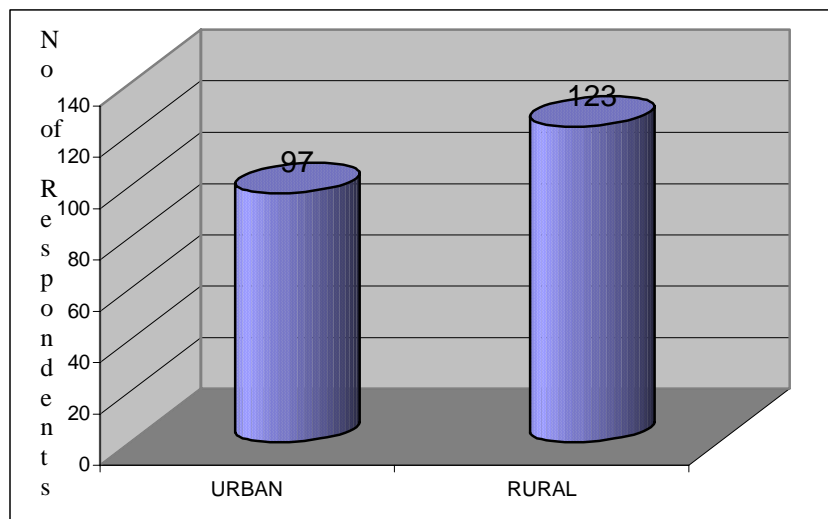
##### ***Residential Area***

Respondents chosen in urban and rural areas in the sample were as in table 5.1 and figure 5.1 :-

**Table 5.1 Respondents by residential area**

Region	No. of Respondents	% n = 220
Urban	97	44
Rural	123	56
Total	220	100

**Fig 5.1 Respondents by residential Area**



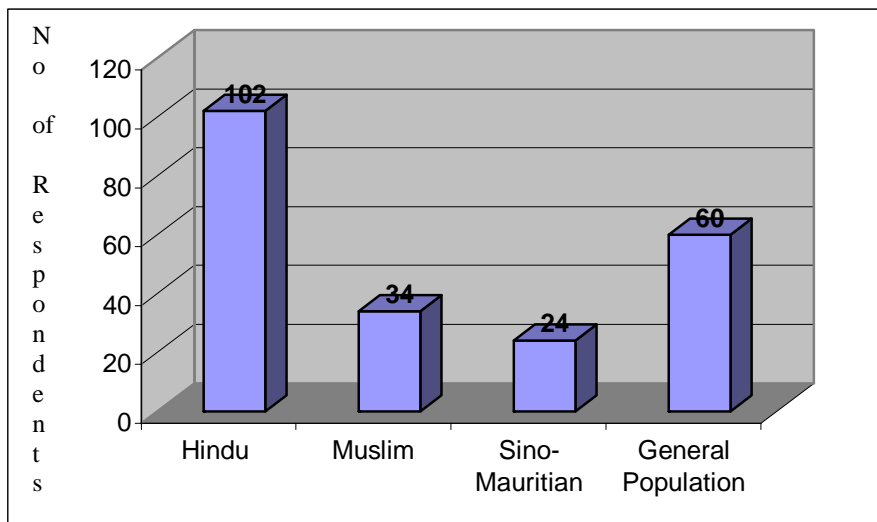
**Religion/ Ethnic Group**

Respondents chosen in each ethnic group were in accordance with the sample as in table 5.2 and figure 5.2 :-

**Table 5.2 Respondents by ethnic groups**

<i><b>Ethnic Group</b></i>	<b>No. of Respondents</b>	<b>% n = 220</b>
Hindu	102	51
Muslim	34	17
Sino-Mauritian	4(+20)	2
General Population	60	30
<b>Total</b>	<b>200(+20)</b>	<b>100</b>

**Fig 5.2 Respondents by ethnic groups**



As explained in section 4.8 (p. 182), twenty additional Sino-Mauritian consumers were interviewed in view of their small number in order to allow the extrapolation of the results. Table 5.2 and figure 5.2 show the physical composition of the different ethnic groups of the respondents. The respondents were in line with the sampling criteria and reflect the reality of the local society.

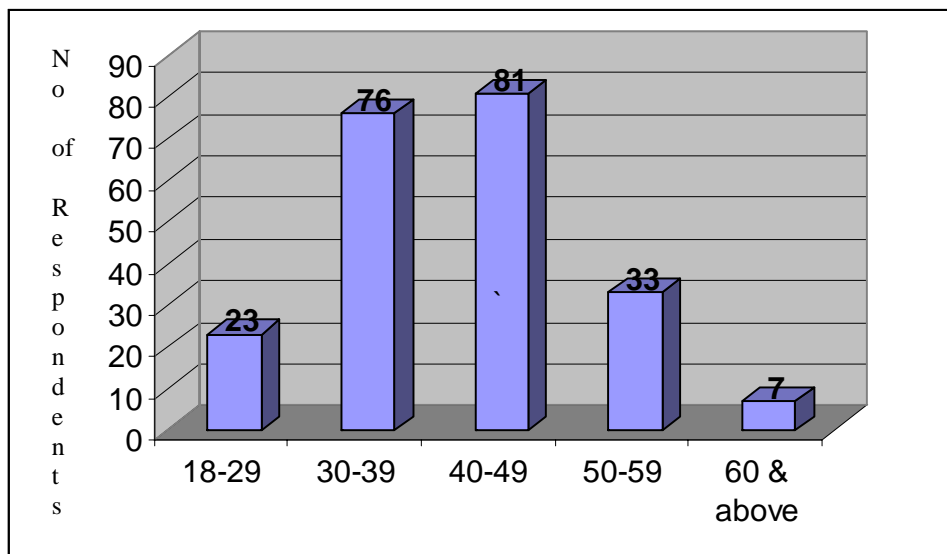
### Age of Respondents

Age declared by respondents were as in table 5.3 and figure 5.3 :-

**Table 5.3 Age of respondents**

<b>Age Group (years)</b>	<b>No. of Respondents</b>	<b>% n = 220</b>	<b>Cumulative %</b>
18-29	23	10	10
30-39	76	35	45
40-49	81	37	82
50-59	33	15	97
60 & above	7	3	100
<b>Total</b>	<b>220</b>	<b>100</b>	<b>100</b>

**Fig 5.3 Age of Respondents**



From table 5.3 and figure 5.3, it can be inferred that about 71% of the respondents involved in the sample were aged between 30 and 49 years. It is also observed that the least number of respondents comes from those aged 60 and above which represents about 3.2% of the total sample.

### **Level of Education**

The levels of education as declared by respondents were as in table 5.4 and figure 5.4:-

**Table 5.4 Level of education of respondents**

<b>Level of Education</b>	<b>No. of Respondents</b>	<b>% n = 220</b>	<b>Cumulative %</b>
None	11	5	5
Primary Level	83	38	43
"O" Level	62	28	71
"A" Level	26	12	83
University Level	38	17	100
<b>Total</b>	<b>220</b>	<b>100</b>	<b>100</b>

**Fig 5.4 Level of education of respondents**

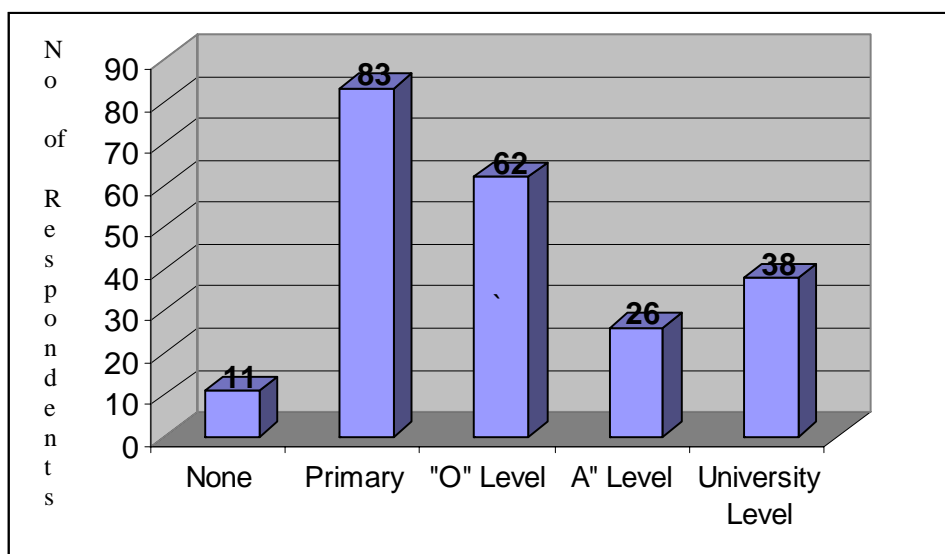


Table 5.4 and figure 5.4 depict the educational standards of the respondents involved in the sample which have been categorised in 5 distinct groups among which the least proportion constituted were those respondents who did not reach the primary level. It is to be noted that in the local context, university level education may also include a certificate course dispensed by a tertiary institution.



### **Occupational Groups**

The capacities in which the respondents were employed were according to the sample selection criteria as explained in section 4.7 (p. 177). These were as in table 5.5 and figure 5.5:-

**Table 5.5 Respondents by occupational groups**

<b>Occupation</b>	<b>No. of Respondents</b>	<b>% n =220</b>	<b>Cumulative %</b>
Professional/Managers/Technicians/Senior Officials	33	15	15
Middle Management/Sales and Service Workers/Clerks and Administrative Staff	49	22	37
Skilled worker/Unskilled/Manual Workers	138	63	100
Total	220	100	100

**Fig 5.5 Respondents by occupational groups**

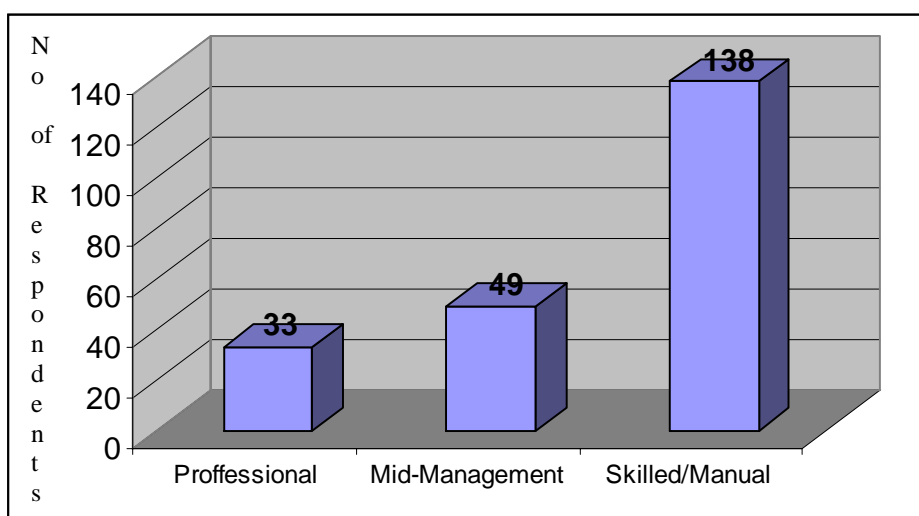


Table 5.5 and figure 5.5 show that more than 60% of the respondents involved in the sample come from the skilled/unskilled/manual class, 15% and 22.3% respectively come from the professional/managers class and the middle management class.

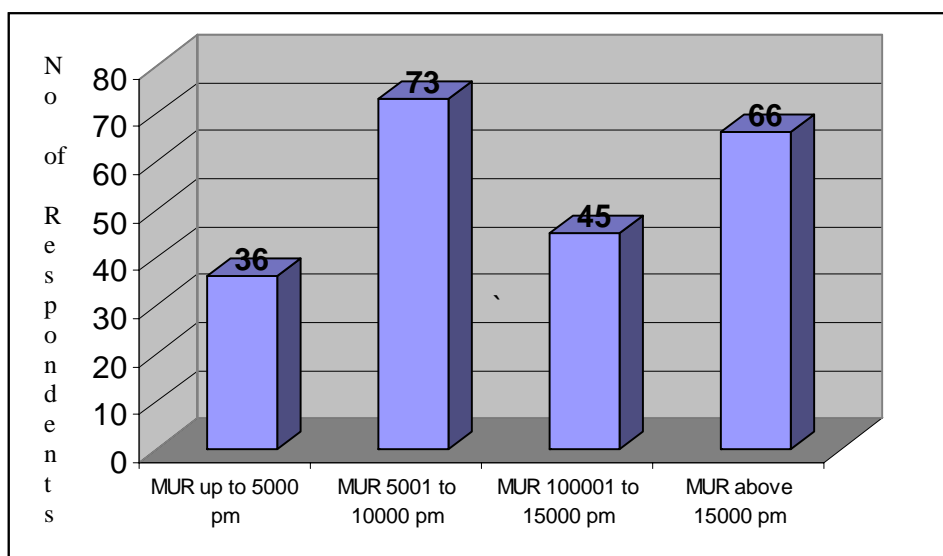
### ***Income per month***

The income per month declared by the respondents were as in table 5.6 and figure 5.6:-

**Table 5.6 Respondents by income groups**

<b><i>Income per month</i></b>	<b>No. of Respondents</b>	<b>% n = 220</b>	<b>Cumulative %</b>
Up to MUR 5,000 p.m.	36	17	17
MUR 5,001 to MUR 10,000 p.m.	73	33	50
MUR 10,001 to MUR 15,000 p.m.	45	20	70
Above MUR 15,000 p.m.	66	30	100
<b>Total</b>	<b>220</b>	<b>100</b>	<b>100</b>

**Fig 5.6 Respondents by income groups**



Income per month has been recorded in 4 categories. It is observed that the lowest income group earning up to MUR 5000 per month is the smallest group in the local population, while the largest category consists of those respondents earning between MUR 5001 and MUR 10,000 per month.

## 5.5 INSTALLATION OF THE WATER SUPPLY

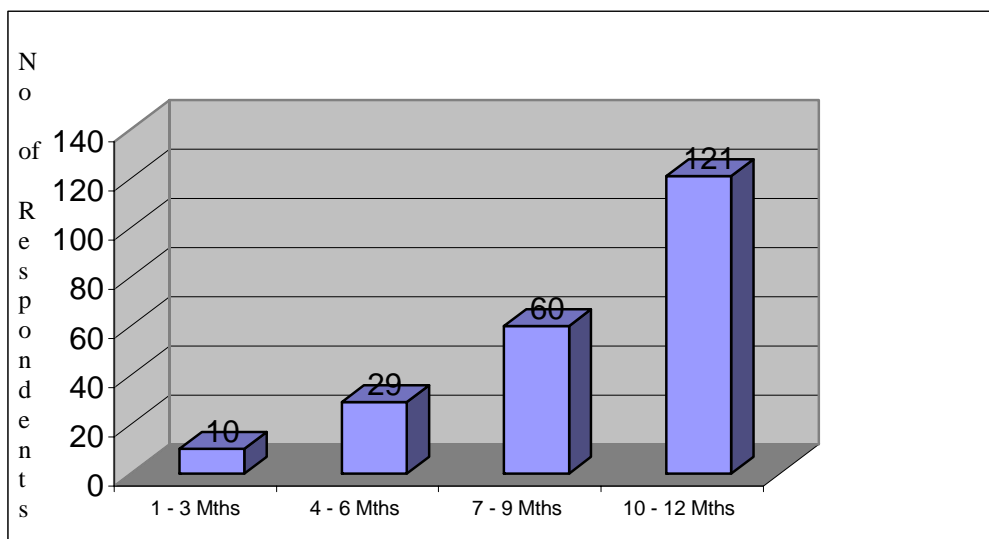
The first question of the consumer survey establishes the period since when the respondent had a water supply. The sample for the survey is made up of domestic consumers who had a water supply since a maximum of twelve months so that they would be in a position to remember and recall facts and reply to the questionnaire properly. The results of the survey are in table 5.7:-

**Table 5.7 The number of months elapsed since the respondents had a water supply installed and the frequency of occurrence.**

<b>Q1 No. of months since when water supply installed</b>	<b>No. of Respondents</b>	<b>% n = 220</b>	<b>Cumulative %</b>
1-3	10	4.5	4.5
4-6	29	13.2	17.7
7-9	60	27.3	45.0
10-12	121	55.0	100
<b>Total</b>	<b>220</b>	<b>100</b>	<b>100</b>

Figure 5.7 is a graphical presentation of the frequency of occurrence of the respondents segmented according to the number of months elapsed since when they were given a water supply.

**Fig 5.7 The number of months elapsed since the respondents had a water supply installed and the frequency of occurrence**



From table 5.7 and figure 5.7, it is apparent that more than half (55%) of the respondents in the sample had been given a water service connection between 10 and 12 months; while 45% of the persons surveyed had been given a water supply within a period of 9 months.

## **5.6 REASONS FOR APPLYING FOR A DOMESTIC WATER SUPPLY**

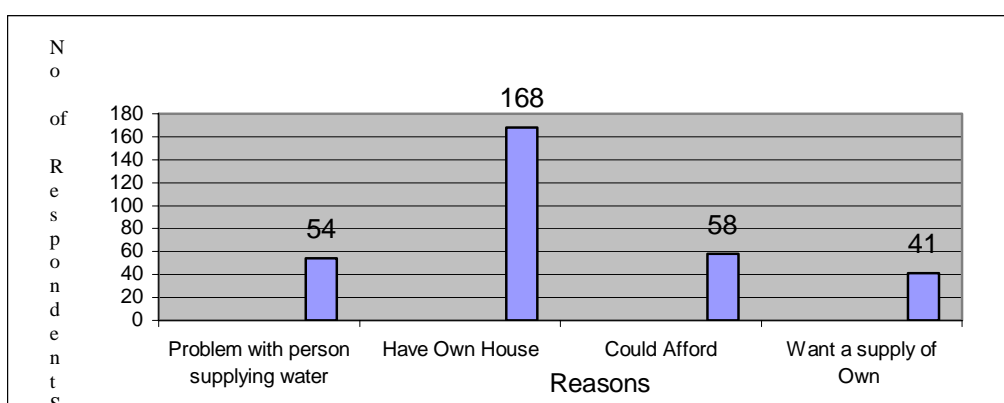
### **5.6.1 Problem Recognition**

A consumer undergoes the process of problem recognition when his desired state is not equivalent to his actual state. This means that he has an unfulfilled need. The replies to Question 2 establish this problem recognition process which created the need in the respondent to have a water supply of his own. Details of replies are as shown in table 5.8. The respondents had the option to give more than one reply.

**Table 5.8 Reasons for applying for a water supply**

<b>Q2 I applied for a water supply because: (More than one answer possible)</b>	<b>No. of Respondents</b>	<b>% n = 220</b>
I was having problems with the person from whom I was taking water	54	24.5
I have my own house	168	76.4
I could afford it	58	26.4
I wanted a supply of my own like others	41	18.6
My family and friends requested me to have one	20	9.1

**Fig. 5.8 Reasons for applying for a water supply**



The chart (figure 5.8) reproduces the information contained in the table 5.8, whereby one can notice that the major reason for applying for a water service connection had to do with the fact that at least 76.4% of the respondents possessed their own house. This finding is in line with the local reality in that every new house which is built is provided with a water connection at the request and at the cost of the owner. The lack of a water supply is likely to put the consumer in a needy and problematic situation. In that respect, the consumer is also motivated by financial and social factors including social groups in his decision-making (section 5.12, question 12 p. 268).

### **5.6.2 Procuring Water From Neighbours**

It is to be noted that prior to applying for a water supply, 54 (24.5%) of respondents did not have a water supply of their own and were sharing the water supply of their neighbour with whom they had started to have problems, that is, their relationship had started to deteriorate. Thus, their need for a water supply arose. They were bound to apply to the CWA for a water connection. Some of these respondents could have been tenants as well. The trend noted among domestic consumers in Mauritius is to be less and less dependent on neighbours for water (section 5.10.3, question 10 p. 263). Observation has revealed that in certain cases consumers sharing the water supply of neighbours are at times required to pay to the latter more than what they would normally have been charged by the CWA had they been its customers. This practice is against the provisions of the CWA Regulations (Government Notice No. 122 of 1992). Thus the policy of the CWA in Mauritius is for every household to have a domestic water supply.

### **5.6.3 New Ownership of House**

A house without a water supply would really be incomplete to its new owner. The result is that the greater majority, that is 76.4%, of potential domestic water supply subscribers were new owners of houses. Development of residential areas, specially in suburban and rural regions constitutes an important item for policy makers as this may have serious implications both for the residents and for the social and physical environments. For this reason, every effort is made by the CWA in Mauritius to provide appropriate water infrastructure to ensure an adequate and safe water supply to all residential areas.

### **5.6.4 Affordability**

58 (26.4%) of the respondents indicated 'affordability' in reply to question 2 as one of the determining factors for applying for a domestic water supply.

Replies to question 10 further indicate that 42.7% of the respondents could afford to pay the installation costs at the material time (section 5.10.3 p. 263). This, however, does not mean that affordability was a constraining factor for the rest of the respondents. This is confirmed by the fact that only 4 (1.8%) (appendix B) of the respondents indicated that they could not afford to pay for the water supply.

### **5.6.5 Social Status**

Among other reasons for having a domestic water supply, 41(18.6%) of the respondents replied that they were motivated by the wish to be like others. In other words, they wanted to improve their status and thus have self-satisfaction. Only 2 (0.9%) of the respondents chose to specify that they were not motivated by status (Question 2 appendix B). In this context, the survey revealed that consumers who were sharing the water supplies of their neighbours were lower on the economic and social scale than their neighbours. This might explain the desire in them for social improvement. Replies to question 10 as shown in section 5.10.3 (p. 263) further indicate that the tendency among Mauritian householders is to have their own water supplies for their domestic needs.

### **5.6.6 Social Groups**

The survey revealed that social groups too play a role in deciding to apply for a domestic water supply. 20 (9.1%) of the respondents indicated, among other reasons, that they were requested by their family and friends to have a water supply of their own. Water is such a vital commodity that consultation among family members on issues connected therewith becomes a family matter. Only 2(0.9%) of the respondents stated not having been requested by family and friends to apply for a water connection (Question 2 appendix B). Replies to question 12 show that 34 (15.5%) of the respondents had relied on the advice of their family and friends in finally deciding to take a water supply of their own (section 5.12 p. 268).

Sections 5.6.1 to 5.6.6 relate to question 2. The replies give a clear picture of the Mauritian context as to why people feel the need to have a domestic water supply. The replies in order of priority are new ownership of house, affordability, inability to continue sharing neighbour's water supply, status, that is, wish to have a water supply like others, advice of family and friends. The tendency of every householder in Mauritius is to have his own water supply for domestic purposes (section 5.10.3 question 10 p. 263). Groups such as family and friends do play a role in deciding whether to acquire a water supply. The joint family system was very common among the previous generations. The departure from the joint family system to set up a nuclear family, for example by the acquisition of a new house, gives rise to the need for a domestic water supply. A minority of the householders would even go as far as taking a loan in order to fulfill this need (section 5.12 question 12 p. 268).

### **5.6.7 Discussion**

All the five reasons enumerated by the respondents in reply to Question 2 stand justified in the models discussed in chapter 2. An unfulfilled need resulting in problem recognition is present in all the models. In the Nicosia model, message exposure creates the desire or need in the individual to acquire a product or service. In the case of domestic water in Mauritius, 'message exposure' would very rightly stand side by side with 'consumers' predispositions'. Message exposure by the CWA in Mauritius takes place, for example, through communiqués in the press, on the radio and on the television, press conferences, talks, pamphlets, posters, exhibitions and such events like inauguration of water supply projects. The reasons put forward by the respondents do expose individuals to such situations whereby they find themselves in the need to have a water supply and, therefore, apply to the CWA for same. Such situations are termed as "unanticipated circumstances" in the Engel- Blackwell model and as "situational influences" in the Engel-Blackwell-Miniard model. In both these models, such situations are further created through marketer-dominated stimuli.



In the integrated model, such situations emanate from firm's attributes, product attributes, social environment and from individual, social and situational factors.

In the Howard and Seth model, the input stimulus display draws attention and creates motives, that is, need leading to problem recognition, attitude, intention and purchase. The reasons mentioned in replies to Question 2 are contained in all the stimulus displays, namely, the significative, the symbolic and the social in the Howard and Seth model. These are detailed in table 5.9.

**Table 5.9 Reasons for applying for a water supply and the Stimulus display in Howard and Seth model**

<i>Reason as per Survey Questionnaire</i>	<i>Stimulus in Howard-Seth model</i>	<i>Type of Stimulus Display in Howard - Seth model</i>
<b>Q2 I applied for a water supply because:</b> I was having problems with person from whom I was taking water.	Social class	Social
I have my own house	Social class	Social
I could afford it	Price	Significative & Symbolic
I wanted a supply of my own like others	Social Class	Social
My family and friends requested me to have one.	Family , Social Class, Reference Group	Social

**Source : Author**

As in the Engel-Blackwell model, the five reasons contained in replies Question 2 constitute the stimuli in the input stage which goes to the memory and give rise to problem recognition in the decision process stage. Likewise, in the Engel-Blackwell-Miniard model, the reasons which prompted the respondents to apply for a water supply are the stimuli in the input stage. These stimuli react on the memory and lead to problem recognition in the decision process. As explained above, the same process is seen in domestic water consumers in

Mauritius when the reasons which prompted them to apply for a water connection are analysed.

As shown in the preceding paragraphs, the elements which react on the consumer's memory giving rise to the need for a water supply and to the problem recognition, can be classified into individual, economic and social groups. These elements reflect the personality and self-concept of the individual. Personality refers to the psychological characteristics that determine and reflect how an individual responds to his environment and in different situations. Self-concept is how an individual perceives himself in relation to others, his aspirations, his own qualification on how others perceive him and his own reflection by others (section 2.11 p. 49). The factors revealed by question 2 of the survey which prompted the respondent to move towards having his own water supply has a psychological dimension. No water connection on one's premises means reliance on neighbours and therefore lower in status than the latter. The respondents who applied for a water connection because they had become owners of their houses indicate personal achievement on the social and economic levels and enhancement of status (Q2.2). Question 2.3 reveals the affordability of the respondent to pay for a water supply. This constitutes an economic factor which reflects the economic class and status of the individual. Question 2.4 reveals that 41(18.6%) of the respondents wanted to be like others status-wise.

The individual undergoes the process of motivation, perception and learning according to questions 2.1 and 2.5 before deciding to have a water connection (section 2.12 p. 54). Hoyer and MacInnis (2001:54) define motivation as 'an internal state of arousal' with aroused energy towards achieving a goal. Cant *et al* (2002:99) refer to Solomon and Stuart (1997) and define perception as 'the process by which people select, organize and interpret stimuli to the five senses of sight, sound, smell, touch and taste'. (section 2.12.4 p. 60). Schiffman and Kanuk (1996:201) explain consumer learning as 'the process by which individuals acquire the purchase and the consumption knowledge and experience

they apply to future related behaviour'. The individual's deteriorating relationship with his neighbour makes him realise the problem and motivates him towards becoming self-dependent as regards his water supply. The individual is further motivated by his family and friends to secure a water connection. In like manner, factors like house ownership and affordability act as motivators (Q 2).

Replies to Question 2 give an insight of the respondents' attitudes and beliefs. Attitudes and beliefs have been fully explained in sections 2.12.5 and 2.14 ( pp. 61, 72). For Loudon and Bitta (1996:423), 'an attitude is how positive or negative a person feels towards an object.' The authors report Allport (1989) who views attitudes towards an object in a consistently favourable or unfavourable way. Finally, the same authors define attitude as 'an enduring organisation of motivational, emotional, perceptual and cognitive process with respect to some aspects of the individual world.' Beliefs 'consist of the very large number of mental or verbal statements that reflect a person's particular knowledge and assessment of something (Loudon and Bitta, 1993:477). The replies to Question 2 of the survey shows that the attitude of the respondent to secure a water connection is the result of the experience and inner feeling undergone by him. This attitude and belief is consistent as 96% of the respondent agreed that they would advise people without a water connection on their premises to have one (table 5.30, Q. 14).

Cialdini *et al* (2001:18) have put forward six principles which influence consumer behaviour. These are reciprocity, scarcity, authority, consistency, liking and consensus (section 2.15 p. 75). The information revealed by Question 2 and contained in table 4.8 can be situated within these six principles. Reciprocity or its absence can be seen in the respondent's relationship with his neighbour (Q 2.1). Scarcity is seen in lack of a water connection on respondent's premises (Q 2). For the consumer, authority rests with the CWA which is the sole supplier of water in the country (Q.3). Consistency of attitude towards the product rest on

the fact that water is a vital commodity of daily use. There is generally consensus among groups of respondents who chose the same reply on the reasons revealed by Question 2 for having a water connection of their own. In addition, 41 (18.6%) of the respondents clearly declared that they wanted to be like others which indicates a consistency as regards the lifestyle of others which the respondent desires to adopt.

## 5.7 INFORMATION SEARCH

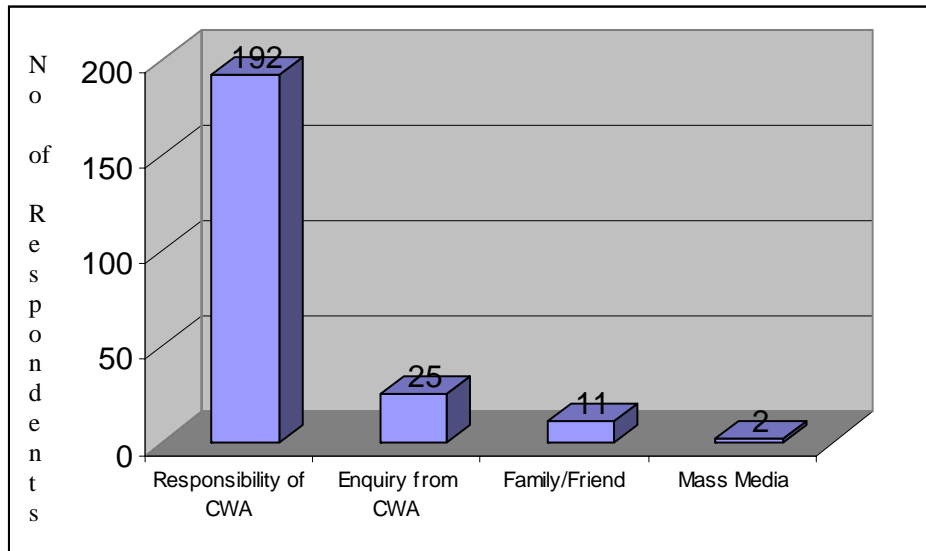
Question 3 of the survey tries to establish the information search process in the consumer's behaviour. The respondents were given the liberty to choose more than one reply. The replies are contained in table 5.10.

**Table 5.10 Information Search**

<b>Q3 I proceeded as below in order to know where to apply for a water supply (More than one answer possible)</b>	<b>No. of Respondents</b>	<b>% n = 220</b>
I already knew that the CWA was responsible for water supply.	192	87.3
I enquired from the CWA	25	11.4
I asked my family and friends	11	5.0
Through Mass Media ( <i>Specify the media</i> )	2	0.9

The replies of respondents are also shown in the figure 5.9 which follows.

**Fig 5.9 Information Search**



The survey revealed that the marketer/supplier dominated information as shown above is well disseminated among the population. 192 (87.3%) of respondents were aware that CWA was responsible for water supply in Mauritius. 25 (11.4%) of the respondents enquired from the CWA on how to obtain a water supply. In other words, 98.7% of respondents knew that they had to approach the CWA in connection with water supplies. 11(5%) of respondents had consulted their family and friends in their search for information; while only 2(0.9%) of respondents had learned about the CWA through the mass media, namely, the radio and television programmes and communiqués.

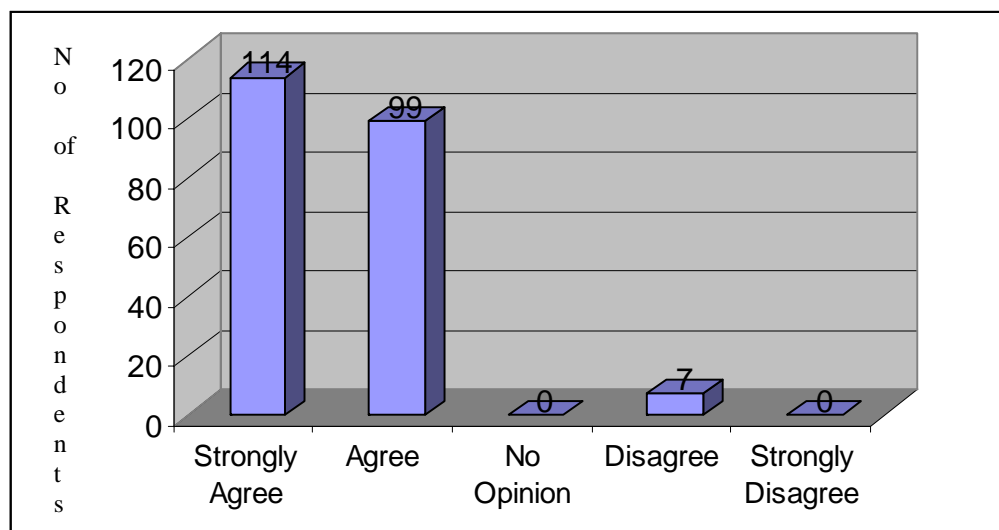
The degree of complexity or otherwise of the information search process, is established by Question 4. The survey results are shown in table 5.11.

**Table 5.11 Degree of complexity of information search**

Q 4 It was easy to find out where to apply for a water supply	No. of Respondents	% n = 220	Cumulative %
Strongly agree	114	51.8	51.8
Agree	99	45.0	96.8
No opinion	0	00.0	96.8
Disagree	7	3.2	100
Strongly Disagree	0	00.0	100
<b>T O T A L</b>	<b>220</b>	<b>100</b>	<b>100</b>

The figure 5.10 below depicts the respondents' replies :-

**Fig. 5.10 Information search was easy**



It is seen from table 5.11 and figure 5.10 that 213 (96.8%) of respondents found it easy to find out where to apply for a water supply as against 7(3.2%) who expressed a different view.

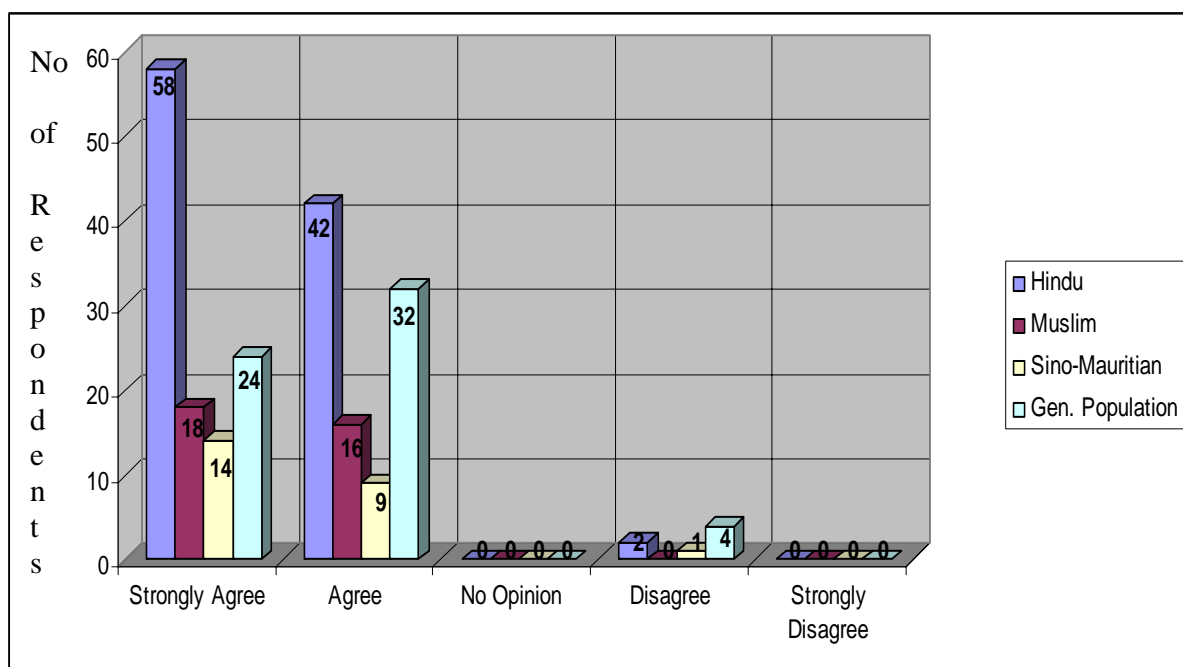
The data generated by question 4 are further cross-tabulated in tables 5.12 to 5.14 against ethnic groups, occupational groups and residential areas and graphically displayed in figures 5.11 to 5.13.

**Table 5.12 Crosstabulation of Information Search And Ethnic Groups**

ETHNIC GROUPS	
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Information search was easy	Hindu	% n = 102	Muslim	% n = 34	Sino Mtian	% n = 24	Gen. Pop	% n = 60	Total
Strongly Agree	58	56.8	18	53.0	14	58.3	24	40.0	114
Agree	42	41.2	16	47.0	9	37.5	32	53.3	99
No Opinion	0	0	0	0	0	0	0	0	0
Disagree	2	2.0	0	0	1	4.2	4	6.7	7
Strongly Disagree	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>102</b>	<b>100</b>	<b>34</b>	<b>100</b>	<b>24</b>	<b>100</b>	<b>60</b>	<b>100</b>	<b>220</b>

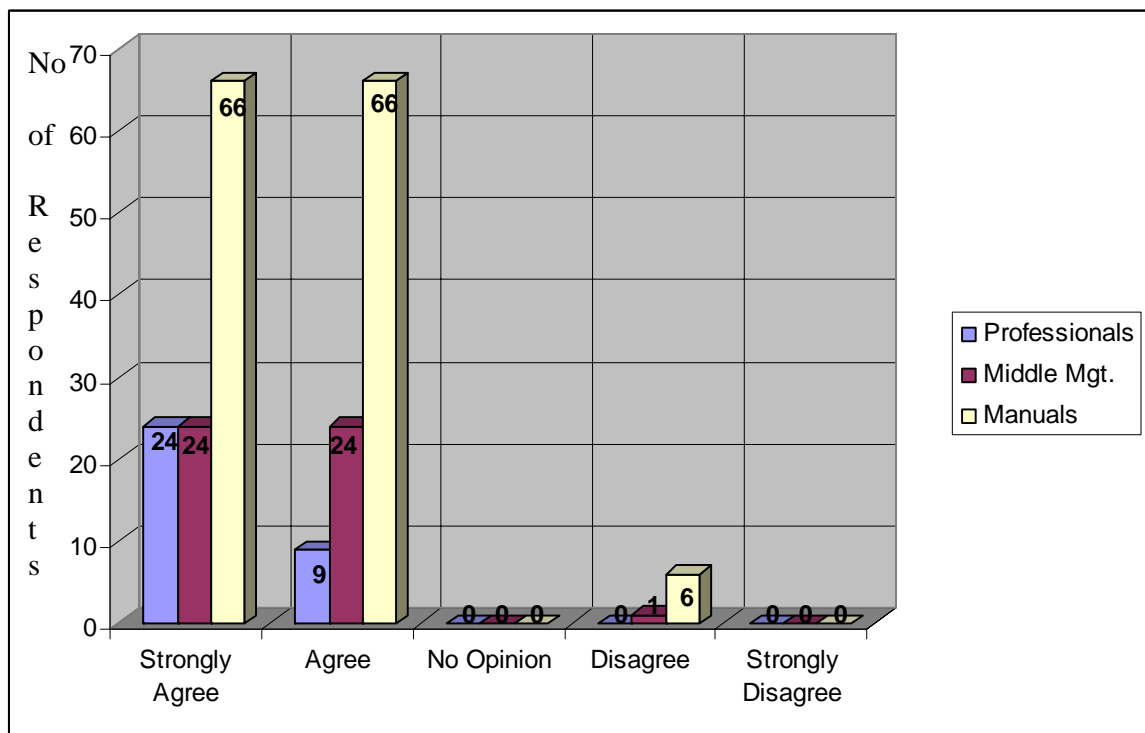
**Figure 5.11 Crosstabulation of Information Search And Ethnic Groups**



**Table 5.13 Crosstabulation of Information Search And Occupational Groups**

Information search was easy	OCCUPATIONAL GROUPS						
	Professionals	% n = 33	Middle Mgt.	% n = 49	Manuals	% n = 138	Total
Strongly Agree	24	72.7	24	49.0	66	47.8	114
Agree	9	27.3	24	44.9	66	47.8	99
No Opinion	0	0	0	0	0	0	0
Disagree	0	0	1	2.0	6	4.4	7
Strongly Disagree	0	0	0	0	0	0	0
<b>TOTAL</b>	33	100	49	100	138	100	220

**Figure 5.12 Crosstabulation of Information Search And Occupational Groups**

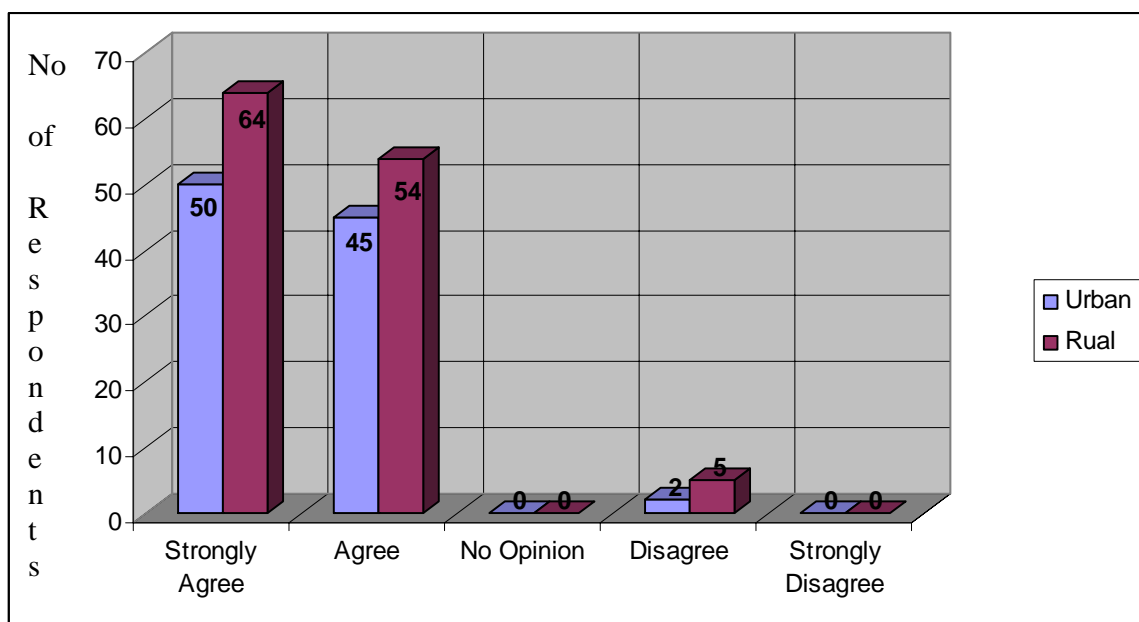


**Table 5.14 Crosstabulation of Information Search And Residential Regions**



Information Search was easy	RESIDENTIAL REGIONS				
	Urban	% n = 97	Rural	% n = 123	Total
Strongly Agree	50	51.5	64	52.0	114
Agree	45	46.4	54	43.9	99
No Opinion	0	0	0	0	0
Disagree	2	2.1	5	4.1	7
Strongly Disagree	0	0	0	0	0
<b>TOTAL</b>	97	100	123	100	220

**Figure 5.13 Information Search And Residential Regions**



Information contained in tables 5.12, 5.13 and 5.14, indicate that 98% of Hindus, 100% of Muslims, 95.8% of Sino-Mauritians and 93.3% of the General Population found that the information search for obtaining of a water supply was easy. These figures show that the CWA of Mauritius is almost equally well positioned in the minds of all the ethnic groups. Only 3.6% of the total respondents expressed a negative opinion.

As far as occupational groups are concerned, 100% of the professionals/managers, 98% of middle management/administrative class

and 95.6% of the manual/unskilled workers found that the information search to obtain a water supply was easy. The figures indicate that the C.W.A is almost equally well known among all occupational groups in Mauritius as the provider of water.

The survey also revealed that 97.9% of the urban respondents and an equal percentage of the rural respondents had found information search to have a water supply to be easy. The results indicate that the CWA is equally well known among urban and rural residents.

Information search refers to the mental or physical information searching which will ultimately lead towards decision-making (Loudon and Bitta, 1993:504) (section 2.16.2 p. 81). It can be at pre-purchase stage, internal or external, by word of mouth or from mass media. Replies to Questions 3.1 and 3.3 in table 4.10 refer to internal search by the respondent. Questions 3.2 and 3.4 refer to the external source of information, namely, the CWA and the mass media. At the same, Question 4 establishes whether information search was easy. 96.8% of the respondents had found the exercise to be easy. (table 5.11 p. 241)

According to Loudon and Bitta (1993:505) (section 2.16.2, p. 81), information search by the consumer takes place when a problem is recognised by the latter. Also, such search can be at pre-purchase stage or on-going. It is noted that the respondent engaged himself in information search upon feeling a problem resulting in a need and that such search took place at pre-purchase stage. The pattern of information search which generally applies in the market place is through word of mouth, from sales people and mass media (Schiffman and Kanuk, 1996:563) (section 2.16.2 p. 81). It is noted from replies to question 3 of the survey that this pattern was also adopted by the respondents.

The information search process is seen in all the models that have been

reviewed in chapter 2. In the Nicosia model, it can be identified in search in field two. In the Howard and Seth model, it is mentioned as an overt search in the perceptual construct. In the Engel-Blackwell model, the consumer is subject to message exposure at the information processing stage. In this model, while 'external search' takes place at input stage, 'search' takes place at the decision process stage. In the Engel-Blackwell-Miniard model, the consumer is subjected to message exposure and prompted towards external search. Both processes serve as inputs. However, 'search' takes place at the decision process stage. In all the models, messages are marketer– dominated. In the Nicosia model, the firm's attributes and message exposure are contained in field one. In the Howard and Seth model, the significative and symbolic stimulus displays, namely, quality, price, distinctiveness, service and availability emanate from the marketer. In both the Engel-Blackwell and the Engel-Blackwell-Miniard models, the message exposure constitutes the marketer dominated stimuli to which the consumer is “exposed” in the information processing stage. In the integrated model, firm's attributes and product attributes emanate from the supplier.

The survey reveals that the CWA as sole supplier and “undertaker” of water in Mauritius satisfies the models as regards “message exposure”. The results indicate that the CWA is well known among water consumers. As regards the complexity of the information search, 213 (96.8%) of the respondents found it easy to determine where to apply for a domestic water supply.

Replies to questions 3 and 4 show that as far as the CWA in Mauritius is concerned, it is well known to the Mauritian consumers as regards its responsibility as a service provider. Moreover, information search for the obtention of a water supply in Mauritius is easy. These can be explained by the particularities of the local context. Mauritius is only 1865 square kilometers with a population of 1.2 million inhabitants. Information by word of mouth is fast and common. As far as dissemination of the responsibilities of the CWA among the public is concerned, the mass media does not play a predominant role.

However, the mass media, namely, the press, the radio and television, are useful to the CWA in transmitting messages to the public.

## 5.8 THE FIRM'S ATTRIBUTES

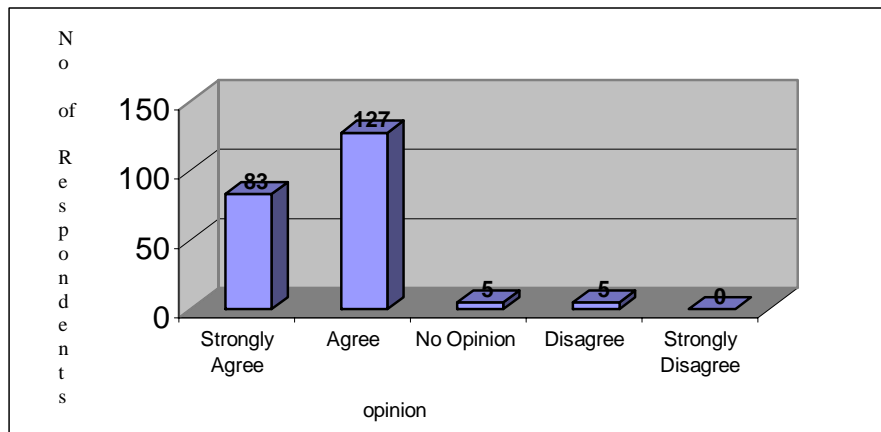
Question 5 establishes the CWA's attributes as a service provider. These attributes are responsible for attitude formation in consumers. This aspect also reflects the level to which the firm is customer-oriented. Replies from the survey are summarised in table 5.15.

**Table 5.15 Level of consumer orientation of CWA Employees**

<b>Q 5 I was well treated by officers of the CWA when I went to apply for a water supply.</b>	<b>No. of Respondents</b>	<b>% n = 220</b>	<b>Cumulative %</b>
Strongly agree	83	37.7	37.7
Agree	127	57.7	95.4
No opinion	5	2.3	97.7
Disagree	5	2.3	100
Strongly disagree	0	0.0	100
<b>T O T A L</b>	<b>220</b>	<b>100</b>	<b>100</b>

The information contained in table 5.15 is reproduced graphically in figure 5.14 which follows.

**Fig 5.14 Level of positive consumer orientation of CWA Employees**



95.4% of the 220 respondents agreed that they were well received by officers of the CWA when they called there to apply for a water supply compared to 2.3% who did not agree therewith. This level of consumer orientation of CWA employees is further supported by replies to question 27 (section 5.22 p. 313), where 193 (87.8%) of the respondents stated that the CWA employees were courteous, 174 (79.1%) stated that they were helpful and 172 (78.1%) stated that they were knowledgeable. These qualities of the employees can be explained by the local context where only the best candidates are able to secure employment in the public sector.

Question 5 shows the perception of the respondents on CWA employees. Schiffman and Kanuk (1996: 177) explain perception as the individual's selection of stimuli from the environment based on the interaction of expectations and motives with the environment itself (section 2.12.3 p. 60). As a psychological process, perception is the very requisite for information selection, organisation and interpretation in order to produce messages and meanings (Schiffman and Kanuk, 1996:127). Members of the public expect to have a good service from CWA employees because the CWA is a public organisation and its employees are public officers (Act No. 20 of 1971). The replies of the respondents as contained in table 5.15 show that 95.4% of the respondents were well received by CWA officers. This aspect contributes towards value creation for the customer (section 2.19 p. 92). Value is seen in the satisfaction of people (Harnett,

1998, as reported by Sweeney 2001:203) At the same time, the performance of CWA employees can be viewed as a satisfier within the context of the hysteresis model of Hill (1985) (section 2.21.3 p. 98).

The attributes of the firm are important elements in consumer behaviour. These attributes are contained in all the models that have been discussed. In the Nicosia model, the firm's attributes are mentioned in sub-field one. In the Howard and Seth model, the firm's attributes are seen in the significative and in the symbolic stimulus displays at the very input stage. In the Engel-Blackwell model and in the Engel-Blackwell-Miniard model, the firm's attributes are seen in the marketer dominated stimuli as input. In the integrated model, the firm's attributes are specifically mentioned. These attributes are further related to 'outcomes' in these models in the decision process stage.

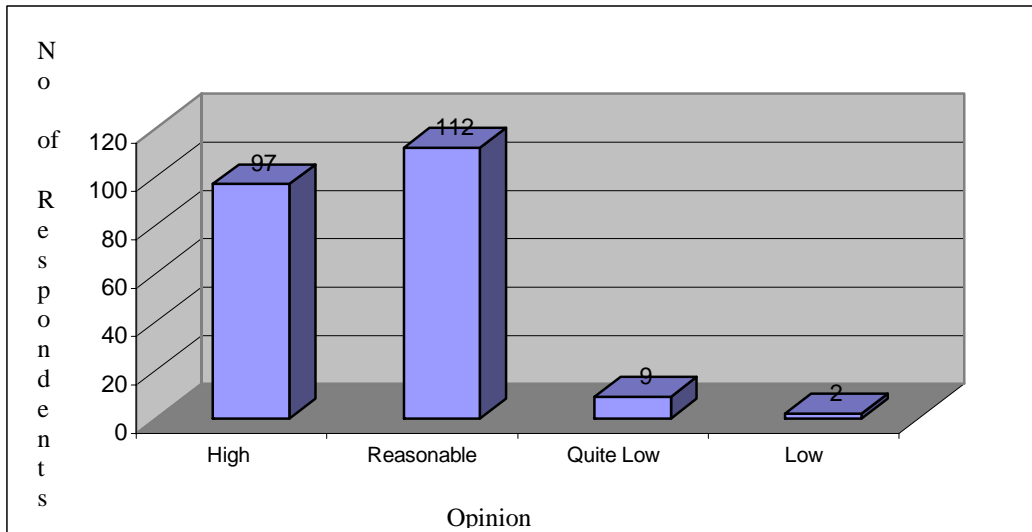
## 5.9 THE PRICE OR MEANS-ENDS

The price of a product is an important element in consumer behaviour and determines the 'choice' by the consumer. How do domestic water consumers perceive the money claimed by the CWA for the installation of a water supply? The replies summarised in table 5.16 and figure 5.15 relate to Question 6 :-

**Table 5.16 Opinion on price of a domestic water supply**

<b>Q 6 The money claimed by the CWA for installing the water supply was: (<i>only one answer possible</i>)</b>	<b>No. of Respondents</b>	<b>% n = 220</b>
High	97	44.1
Reasonable	112	50.9
Quite low	9	4.1
Low	2	0.9
<b>T O T A L</b>	<b>220</b>	<b>100</b>

**Fig. 5.15 Money claimed by CWA for a water supply**



The table 5.16 and figure 5.14 show that 97(44.1%) of the respondents qualified the money claimed by the CWA for a water supply as high, 112(51.9%) as reasonable, 9(4.1%) as quite low and 2(0.9%) as low. In all 55% of the respondents situated the amount on the scale 'reasonable-low'.

It is also noted from replies to question 17 (section 5.17 p. 284) that almost the same percentage (38.6%) of the respondents who qualified the domestic water tariff in Mauritius as high had also qualified the cost of a domestic water connection as high. Purchasing behaviour being related to income, the replies of the respondents in this respect can be explained by the fact that 36(16%) of the respondents were drawing up to MUR 5000- per month and 73(33%) of them were drawing between MUR 5001- and MUR 10000- per month.

The perception of consumers on the price of a domestic water supply as revealed by the survey is further crosstabulated and graphically depicted against ethnic groups, occupational groups and residential areas as shown in tables 5.17 to 5.19 and figures 5.16 to 5.18.

**Table 5.17 Crosstabulation of Perception on Price of A Water Supply and Ethnic Groups**

Perception on price of a water supply	ETHNIC GROUPS								Total
	Hindu	% n = 102	Muslim	% n = 34	Sino Mtian	% n = 24	Gen. Pop	% n = 60	
High	50	49.0	12	35.3	5	20.8	30	50.0	97
Reasonable	47	46.1	21	61.8	16	66.7	28	46.7	112
Quite Low	3	2.9	1	2.9	3	12.5	2	3.3	9
Low	2	2.0	0	0	0	0	0	0	2
<b>TOTAL</b>	<b>102</b>	<b>100</b>	<b>34</b>	<b>100</b>	<b>24</b>	<b>100</b>	<b>60</b>	<b>100</b>	<b>220</b>

Fig 5.16 Perception on Price of a Water Supply and Ethnic Groups

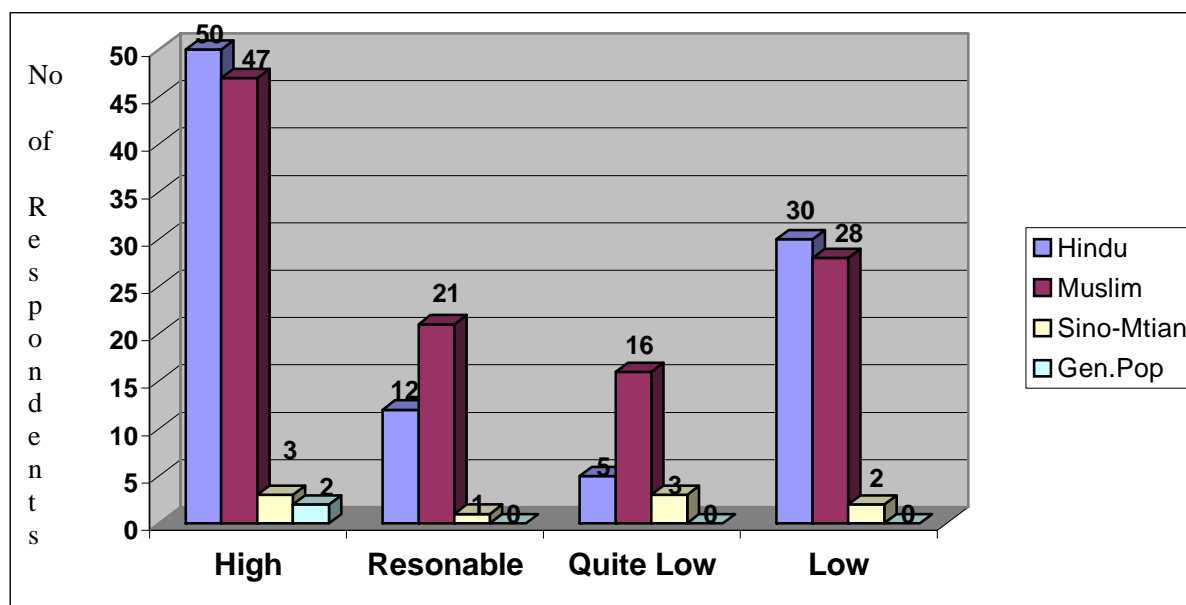
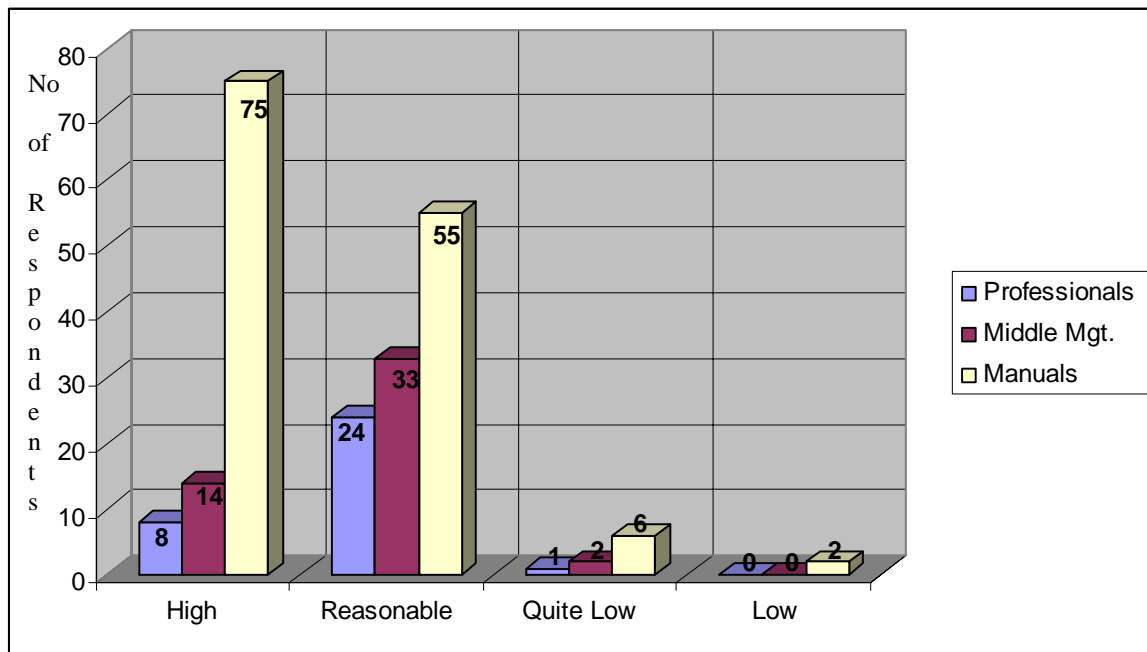


Table 5.18 Crosstabulation of Perception on Price of a Water Supply and Occupational Groups

Perception on price of a water supply	OCCUPATIONAL GROUPS						Total
	Professionals	% n = 33	Middle Mgt.	% n = 49	Manuials	% n = 138	
High	8	24.2	14	28.6	75	54.4	97
Reasonable	24	72.7	33	67.3	55	39.9	112
Quite Low	1	3.1	2	4.1	6	4.3	9
Low	0	0	0	0	2	1.4	2
<b>TOTAL</b>	<b>33</b>	<b>100</b>	<b>49</b>	<b>100</b>	<b>138</b>	<b>100</b>	<b>220</b>

Fig 5.17 Perception on price of a water supply and Occupational Groups

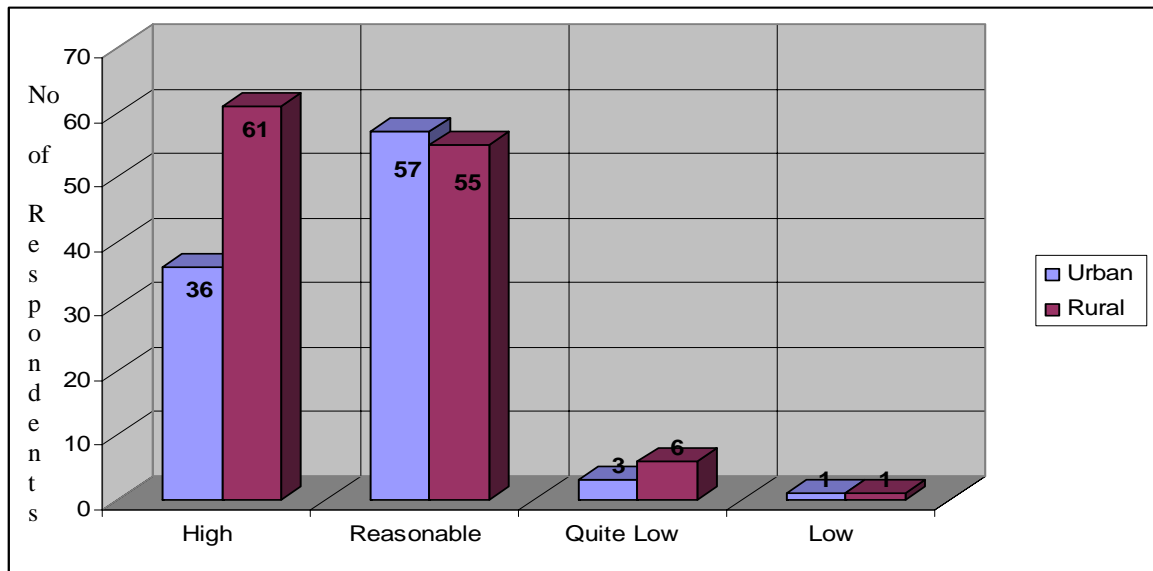




**Table 5.19** crosstabulation of Perception on Price of a Water Supply and Residential Areas

Perception on price of a water supply	RESIDENTIAL REGIONS				Total
	Urban	% n = 97	Rural	% n = 123	
High	36	37.1	61	49.6	97
Reasonable	57	58.8	55	44.7	112
Quite Low	3	3.1	6	4.9	9
Low	1	1.0	1	0.8	2
<b>TOTAL</b>	<b>97</b>	<b>100</b>	<b>123</b>	<b>100</b>	<b>220</b>

**Fig 5.18** Perception on price of a water supply and Residential Regions



The above tables 5.16 to 5.19 and figures 5.15 to 5.18 indicate that the pattern of perception on the money claimed by the CWA for a domestic water supply was similar among the Hindus and the General Population. About 50%, 46% and 3% of both groups respectively qualified the price as high, reasonable and quite low. Only 2% of the Hindus stated the price to be low. The percentage of Muslims and of Sino-Mauritians who qualified the price as high was less than that of Hindus and of the General Population. Thus, a greater percentage of Muslims and of Sino-Mauritians found the price to be reasonable. It is worth mentioning that Muslims and Sino-Mauritians are generally active in the commercial sector, whether as retailers or wholesalers. This aspect in a way explains their perception on the price of a domestic water supply in Mauritius.

Among the occupational groups, about a quarter of the Professionals/Managers and of the Middle Management/administrative staff qualified the price as high while the proportion of manual/unskilled workers with this perception was twice as much. On the other hand, 38.9% of the manual/unskilled workers found the price to be reasonable, compared to 72.7% of Professionals/Managers and 67.3% of Middle Management/ administrative staff. One reason for this difference in perception is that Professionals/Managers and Middle Management/

administrative staff are considered to be higher on the social scale than manual/unskilled workers in the local context. The percentage of the occupational groups which qualified the price as quite low was quite negligible and varied between 3% and 4%. Only 1.4% of manual/unskilled workers found the price as low.

Price is often taken to represent the value of a product. Sweeney (2001:203) refers to Zeithaml (1998) to explain customer perceived value as the 'consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given'. Age defines value as the trade off between quality and price which is the value for money (Sweeney, 2001: 203) (section 2.19 p. 92). The perception of the respondents on the price/value of domestic water is obvious in tables 5.16 to 5.19 and in figures 5.15 to 5.18.

Price, which is a determining factor in consumer behaviour, represents one of the variables in the marketing strategy within the control of the marketer which are used to inform and influence the consumer. The price aspect is present in the models reviewed in chapter 3. The consumer evaluates his means-ends in field two of the Nicosia model in the light of the amount claimed by the CWA for a water supply. In the Howard and Seth model, the consumer is faced with the price factor as significant and symbolic input stimuli at the very initial stage of his decision making process. Likewise, the domestic water consumer in Mauritius finds himself in a similar position and decides whether or not to take a water supply after undergoing the processes of the learning constructs in the Howard and Seth model.

Price emanates from the marketer. As in both the Engel-Blackwell and the Engel-Blackwell-Miniard models, the price of a domestic water supply in Mauritius is set by the marketer, that is, the CWA. In the information processing stage in these two models, price results in yielding/acceptance by the consumer. In the decision-making process, the consumer undergoes the alternative evaluation

process and ultimately decides on the choice/ purchase. Alternative evaluation does not mean evaluation of alternative brands of products. Instead, it means alternative sources of water and alternative sources of finance in the local context. In view of its specific nature, the acquisition of a water supply gets special consideration from the consumer. Water fulfills a basic need of man which represents one of the five tiered needs of Maslow's theory (sections 2.4 and 2.12.1 pp. 33, 56). Some people would go as far as borrowing money to get a water supply. The survey revealed that 29 (13.2%) of the respondents had borrowed money to get their water supply (section 5.12 p. 268). 55.9% of the respondents found the cost of a domestic water supply in Mauritius to be reasonable (section 5.9 p. 250).

## 5.10 CONSUMER INVOLVEMENT OR COMPLEXITY OF THE DECISION-MAKING PROCESS

The complexity of the decision-making process by the consumer is established by Questions 7, 8, 9 and 10 of the survey.

### 5.10.1 Complexity of the problem

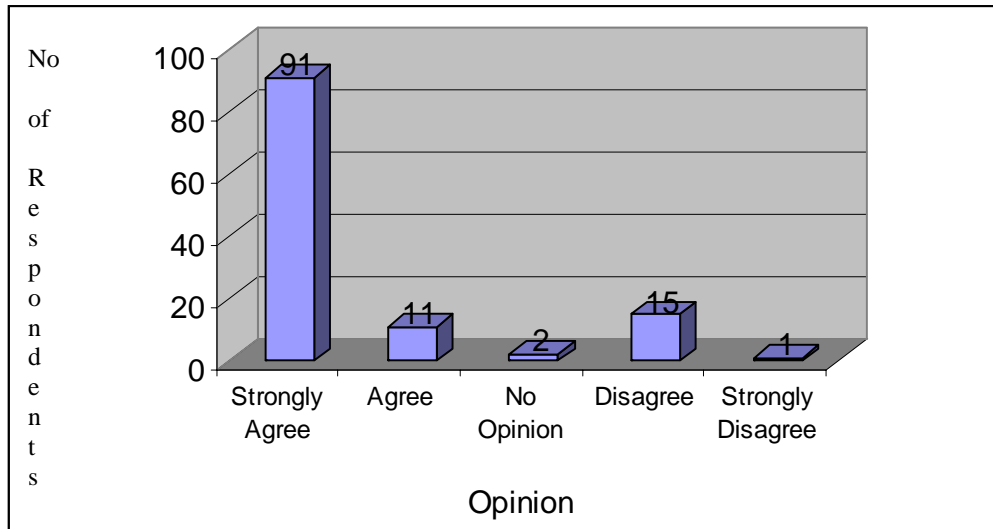
The survey gives the results in table 5.20 in respect of Question 7 :-

**Table 5.20 Degree of complexity of decision-making**

Q 7 IT WAS EASY TO DECIDE WHETHER TO GO AHEAD FOR THE WATER SUPPLY OR NOT	No. of Respondents	% n = 220	Cumulative %
Strongly agree	91	41.4	41.4
Agree	111	50.4	91.8
No opinion	2	0.9	92.7
Disagree	15	6.8	99.5
Strongly disagree	1	0.5	100
<b>TOTAL</b>	<b>220</b>	<b>100</b>	<b>100</b>

The chart in figure 5.19 reproduces the information contained in table 5.20.

**Fig. 5.19 Easy to decide to go ahead with the Application for a Water Supply**



202(91.8%) of the respondents strongly agreed and agreed that it was easy to decide whether to acquire a water supply or not; while 16 ( 7%) did not agree that it was easy to do so. Can therefore the decision-making for acquiring a water supply in Mauritius be classified as routinised? At this stage, it becomes relevant to observe that according to Maslow's (1954) theory of needs, the more biogenic an unfulfilled need is, the more is the consumer pushed towards fulfilling those needs (section 2.12.1 p. 56), and the easier it becomes to decide on the end results, even if achieving those results might not be that easy. Here the commodity involved is a life-sustaining one, which is water. Replies to question 10 (section 5.10.3 p. 263) indicate the tendency among Mauritian householders to have their own water supplies. However, replies to question 12 show that it was not easy for 13.2% of the potential domestic consumers to settle the installation costs of the water supplies. Thus the problem faced by domestic consumers in Mauritius in the absence of a water supply in their premises can be high or low depending on their personal situations, as for example their financial status.

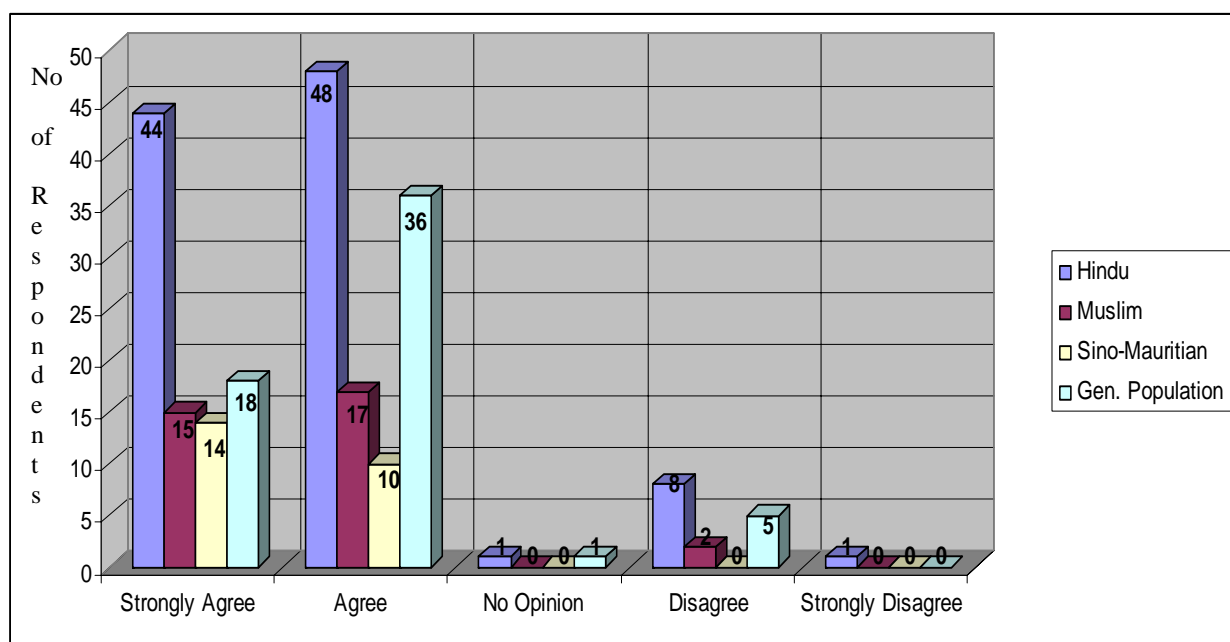
The complexity of decision-making to have a domestic water supply as revealed by replies to questions 7 is crosstabulated and graphically

displayed below against Ethnic groups, Occupational groups and the Residential regions in tables 5.21 to 5.23 and in figures 5.20 to 5.22.

**Table 5.21 Crosstabulation of Complexity of Decision-making to Have a Domestic Water Supply And Ethnic Groups**

Decision to have a domestic water supply was easy	ETHNIC GROUPS								Total
	Hindu	% n = 102	Muslim	% n = 34	Sino Mtian	% n = 24	Gen. Pop	% n = 60	
Strongly Agree	44	43.1	15	44.1	14	58.3	18	30.0	91
Agree	48	47.1	17	50.0	10	41.7	36	60.0	111
No Opinion	1	1.0	0	0	0	0	1	1.7	2
Disagree	8	7.8	2	5.9	0	0	5	8.3	15
Strongly Disagree	1	1.0	0	0	0	0	0	0	1
<b>TOTAL</b>	<b>102</b>	<b>100</b>	<b>34</b>	<b>100</b>	<b>24</b>	<b>100</b>	<b>60</b>	<b>100</b>	<b>220</b>

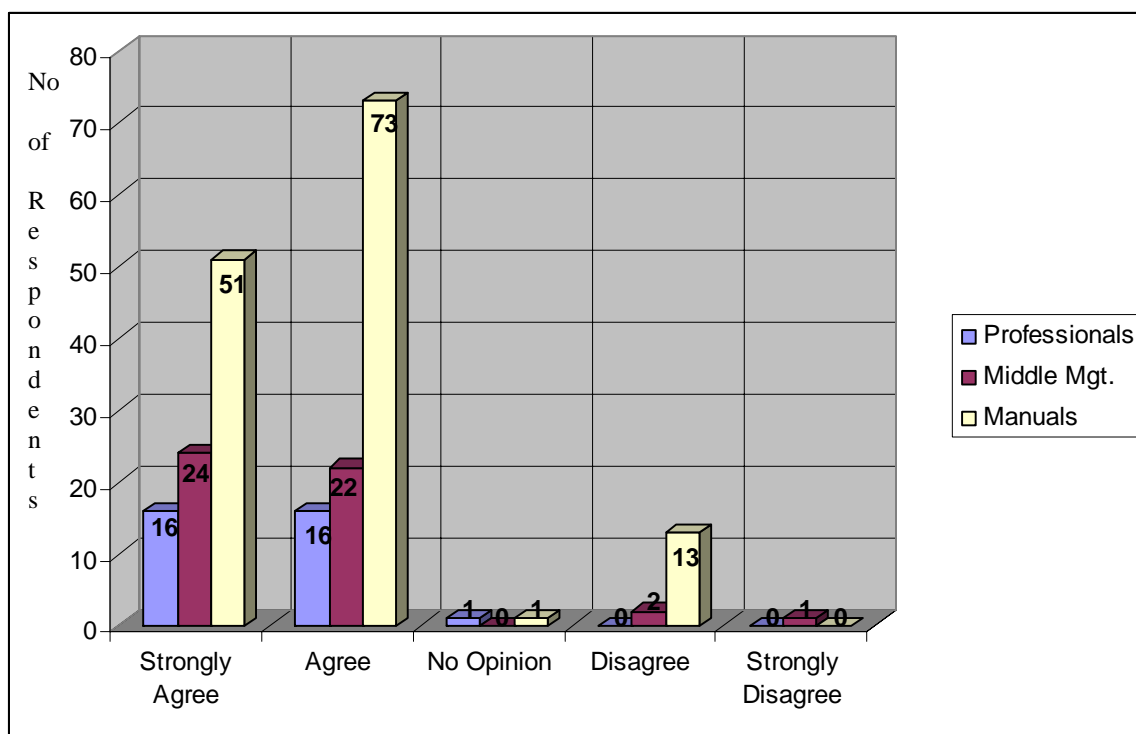
**Fig 5.20 Decision-making to Have A Water Supply Was Easy And Ethnic Groups**



**Table 5.22 Crosstabulation of Complexity of Decision-making to Have A Domestic Water Supply And Occupational Groups**

Decision to have A Domestic water supply was easy	OCCUPATIONAL GROUPS						Total
	Profession- nals	% n = 33	Middle Mgt.	% n = 49	Manuals	% n = 138	
Strongly Agree	16	48.5	24	49.0	51	37.0	91
Agree	16	48.5	22	44.9	73	52.9	111
No Opinion	1	3.0	0	0	1	0.7	2
Disagree	0	0	2	4.1	13	9.4	15
Strongly Disagree	0	0	1	2.0	0	0	1
<b>TOTAL</b>	33	100	49	100	138	100	220

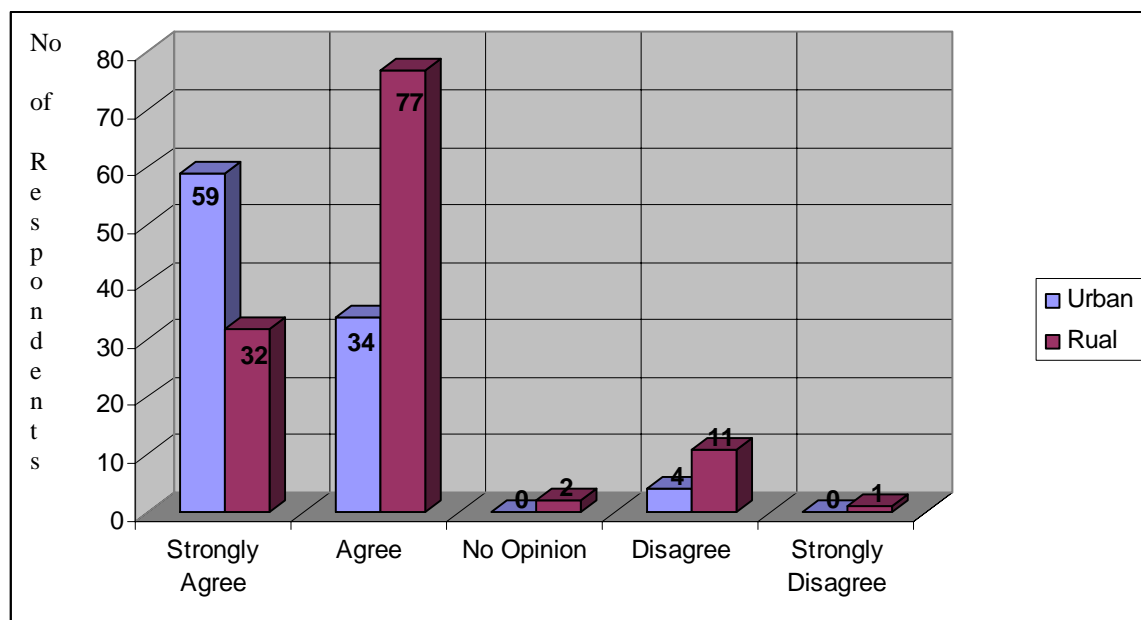
**Fig 5.21 Decision-making to have a Domestic Water Supply Was Easy and occupational groups**



**Table 5.23 Crosstabulation of Complexity of Decision-making to Have A Domestic Water Supply and Residential Regions**

Decision to have a Domestic water Supply was easy	RESIDENTIAL REGIONS				
	Urban	% n = 97	Rural	% n = 123	Total
Strongly Agree	59	60.8	32	26.1	91
Agree	34	35.1	77	62.6	111
No Opinion	0	0	2	1.6	2
Disagree	4	4.1	11	8.9	15
Strongly Disagree	0	0	1	0.8	1
<b>TOTAL</b>	97	100	123	100	220

**Fig 5.22 Decision-making to Have A Domestic Water Supply Was Easy And Residential Areas**



The percentage of Hindus, Muslims and of the General Population for whom decision-making to have a water supply was easy was almost the same, that is about 90%. The figure is slightly higher, that is 100% for Sino-Mauritians. Those who disagreed represented 8.8% of Hindus, 5.9% of Muslims and 8.3% of the General Population.

Among the Occupational groups, decision-making for a water supply can be said to be fairly equally easy. 98% of Professionals/Managers, 93.9% of



Middle Management/ administrative staff and 89.9% of Manuals/unskilled workers found the process to be easy. Only 6.1% of Middle Management and 9.4% of Manuals/unskilled workers disagreed.

Results show that more urban residents found the decision process for a water supply easy compared to rural residents. The figures were 95.9% for urban regions and 88.7% for rural regions. The figures indicate that the greater majority of consumers of each of the ethnic groups, occupational groups and residential regions found the decision-making process to procure a domestic water connection as easy. This can be explained by the fact that water is an item of necessity.

### 5.10.2 Hesitation in Decision-Making

The complexity of a problem and the consumer involvement is seen in the hesitation and despair experienced by the latter in the decision-making process. The replies of the respondents to questions 8 and 9 as regards any discouragement undergone by them are as in tables 5.24 and 5.25:-

**Table 5.24 Hesitation to have a water supply**

<b>Q 8 Did you at any time feel discouraged at going ahead with your application for a water supply?(Agree/Disagree means YES/NO) (If reply neutral or +ve skip Q.9)</b>	<b>No. of Respondents</b>	<b>% n = 220</b>
Yes	32	14.5
No	188	85.5
<b>T O T A L</b>	<b>220</b>	<b>100</b>

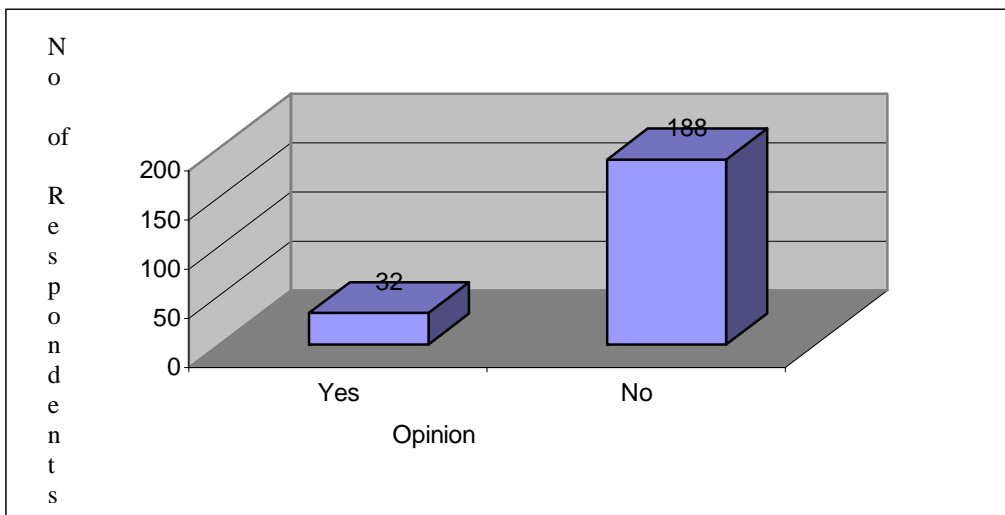
**Table 5.25 Reasons for hesitation to have a water supply**

<b>Q 9 I was discouraged because:</b>	<b>No. of</b>	
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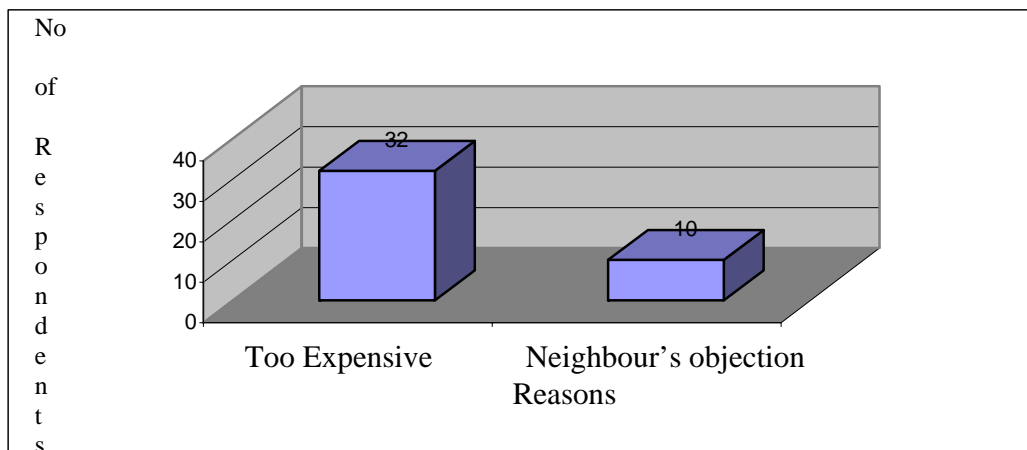
<i>(More than one reply possible)</i>	Respondent s	% n =220
It was too expensive	32	14.5
My neighbour did not allow the pipe to go through his premises.	10	4.5

The information in tables 5.24 and 5.25 are graphically shown in figures 5.23 and 5.24 respectively.

**Figure 5.23 Discouraged at going ahead for a water supply**



**Fig. 5.24 Reasons for being discouraged**



The respondents were given more than one option to express the reason for their discouragement. All the 32 respondents who were discouraged were so because of pecuniary constraints. They found the installation costs as too expensive. In addition, out of the 32 respondents, 10(4.5%) of them faced objection from their neighbours to lay water pipes across their premises. This objection need not be construed as a problem. According to the CWA Regulations (Government Notice No. 122 of 1992), every occupier of a premise can become a consumer of CWA. In Mauritius all premises have got their access roads according to the law. Nothing prevents the potential CWA subscriber from having the water pipe to his premises laid along the access road so long as the conditions of the Local Authorities are fulfilled. The cost involved in certain cases may be high and not within the reach of the common citizen.

### 5.10.3 Determination to Have a Water Supply

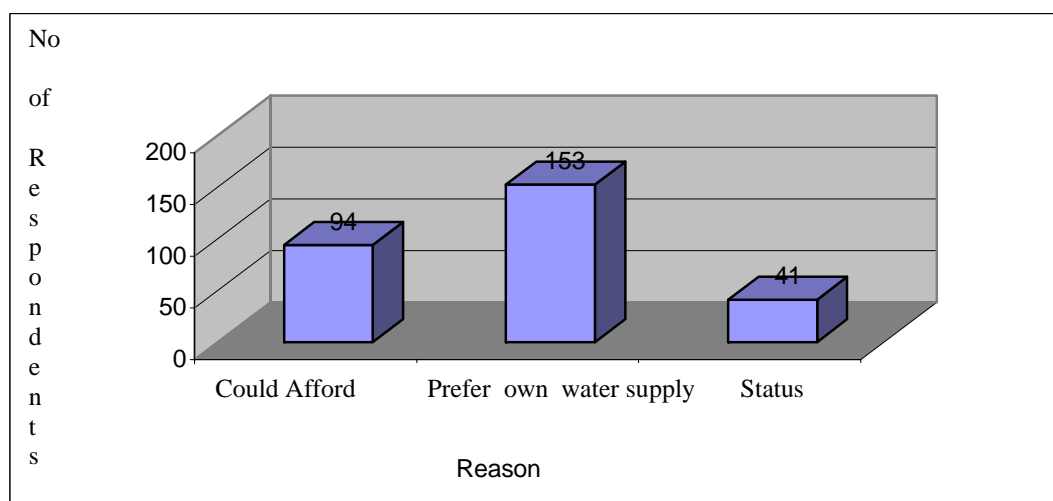
Respondents were given the liberty to state more than one reason as to what encouraged them to have a domestic water supply of their own. Replies to Question 10 of the survey are contained in table 4.26.

**Table 5.26 Reasons for having a domestic water supply**

Q 10 I was not discouraged because: (More than one reply possible)	No. of Respondents	% n = 220
I could afford it	94	42.7
It is better to have one's own water	153	69.5
It is better to be like others	41	18.6

The following figure 5.25 reproduces graphically the information in table 5.24.

**Fig. 5.25 Reasons for not being discouraged**



Of the 188(85.5%) respondents who were not discouraged, 94(42.7%) were so because they had the money. For them, affordability was one of the determining factors. 153 (69.5%) of the respondents stated that it was better to have their own water supplies, which at the same time implies convenience. This was one of the driving factors in the decision-making process for them. Only 41 (18.6%) of the respondent were encouraged to have a water supply through their desire to be like others and for status.

The replies of the respondents contained in table 4.26 reflect the self-concept of the respondents. Self-concept is but one's own image. Self-concept

basically rests on the individual's interaction with others and his social environment. The information in table 4.26 reveals that the respondents wanted to improve their self-image. Affordability (Q 10.1) to acquire a product, and in this case a water connection is certainly an achievement. Questions 10.2 and 10.3 clearly show that the respondents felt that it was better to have a water connection of their own and that they were desirous of being like others.

The replies to question 10 basically reveal the tendency of the Mauritian householders to have their own water supplies for their domestic use. Replies to question 12 supports this fact in that 13.2% of the respondents took loans to pay the installation costs of their water supply. (section 5.12 p. 268)

#### **5.10.4 Complexity in Decision Making**

Respondents who were discouraged at going ahead for a water supply were faced with an acute problem. In the first case, the respondent qualified the price for the new supply as expensive in view of his inability to pay. In the second case, the consumer experienced difficulty in getting his water supply and had to bear all the consequences it involved. In addition, 16 (7.2%) of the respondents had declared in reply to question 7 that it was not easy for them to decide whether or not to go ahead with their application for a water supply (section 5.10.1 p. 256). The problem for these consumers was really complex and their involvement in decision-making could be qualified as high.

The facts contained in the previous paragraph have to be also viewed in light of replies to Question 7 where 91.8% of the respondents declared that it was easy to decide whether or not to go ahead with their applications for a water supply. In this context, the special nature of the product plays a role. Of the 91.8% of the respondents, 85.5% were not discouraged. Thus 6.3% of respondents ultimately were discouraged although they initially found it an easy decision to take. The observation that can be made here is that the

materialisation of a decision may suffer through circumstances. One example of such circumstance could be the inability to meet the costs.

The involvement of the consumer is present although in the models reviewed in chapter 3 and varies with the degree of complexity of the problem. According to the Nicosia model, the involvement of the applicant for a domestic water supply in Mauritius already starts at the message exposure and at the means-ends evaluation stage. In light of the Howard and Seth model, this involvement starts with stimulus ambiguity and goes up to acquisition of and satisfaction with the water supply. In the context of this model, it can be said from information generated by the survey, as stated above, that the consumer experiences extended, limited and routinised problem-solving behaviour according to situations. In the Engel-Blackwell, in the Engel-Blackwell-Miniard and in the integrated models, the consumer's involvement starts right from the message exposure stage and goes up to the acquisition of the water supply by him and his satisfaction/dissatisfaction therewith.

### 5.11 ALTERNATIVE SEARCH AND EVALUATION

Question 11 of the survey tries to establish whether after their problem recognition, the respondents undertook any alternative search and evaluation before taking a final decision. The survey results are shown in table 5.27.

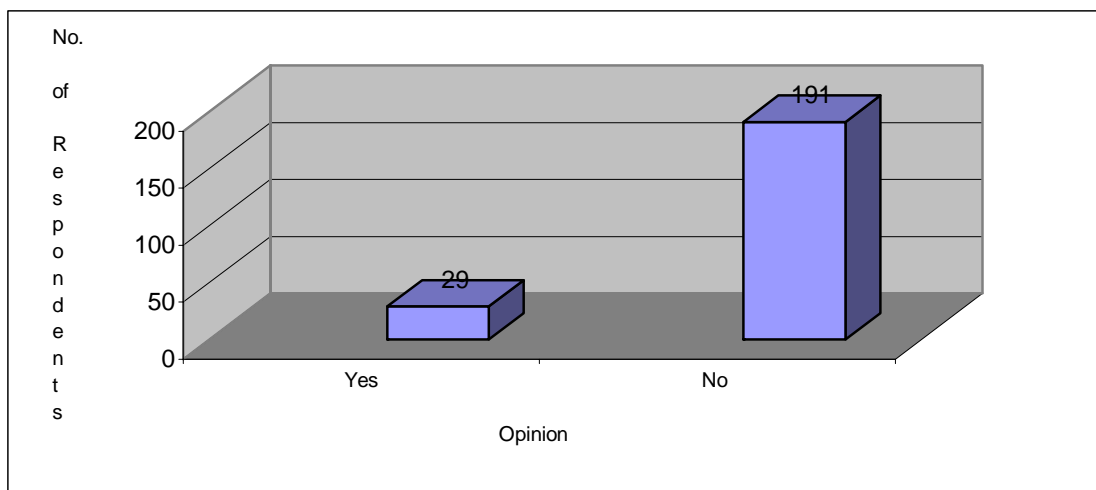
**Table 5.27 Alternative search**

<b>Q 11 AFTER MAKING THE APPLICATION FOR WATER SUPPLY, DID YOU SEARCH FOR AN ALTERNATIVE SUPPLY OF WATER E.G. FROM</b>	<b>No. of respondents</b>	<b>% n = 220</b>
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NEIGHBOURS, FAMILY? (Agree/Disagree means YES/NO) (If reply neutral or +ve Skip Q.12)		
YES	29	13.2
NO	191	86.8
<b>TOTAL</b>	<b>220</b>	<b>100</b>

Figure 5.26 reproduces graphically the information contained in table 5.27

**Fig. 5.26 Alternative Search**



191 (86.8%) of the respondents did not undertake any search for an alternative source of water, while a minority of 29(13.2%) did do so. Here it is relevant to add a few words on water supply for domestic use in Mauritius. During the olden days before piped water became available in the country, that is some 50 to 75 years ago, people depended on water from rivers, canals and wells for their domestic use. Today water from these sources is no longer used for domestic purposes and is no longer considered as safe for drinking. The other main reason for not using these water sources is that walking to such sources and carrying water have completely disappeared from the habit of Mauritian consumers. Consumers prefer to have water supplies on or near their premises. This is due both to social and water supply developments in Mauritius.

Evaluation of alternatives has been literature reviewed in section 2.16.3 (p. 83) Cant *et al* (2001: 151) view customer evaluation of alternatives as 'the act of identifying alternative solutions to a problem and assessing the relative merits and demerits of each' according to pre-established criteria and the limits which customers decide are acceptable when searching for a solution to their problem. The alternative search and alternative evaluation precede decision making. Alternative evaluation is specifically mentioned in all the models that have been discussed. In the case of water, alternative does not exist. The only alternative source of domestic water in Mauritius is sharing the neighbour's supply. The 29 (13.2%) of the respondents who looked for an alternative source of domestic water were among those who were discouraged at going ahead with their applications for a water supply as revealed by replies to Question 10 (section 5.10.3 p. 262). Moreover, the consumer has no option as regards the supplier; the CWA being the sole supplier of water in Mauritius. However, the consumer has the possibility of deciding on alternative source of fund for acquiring a water connection. In fact, according to Question 12.2, 29(13.2 %) of the respondents borrowed money in order to pay for the water connection (section 5.12 p.268).

## 5.12 THE DECISION

Question 12 culminates in the decision by the respondent. The latter was given the liberty to express more than one reason. Reasons given by respondents for finally taking a water supply as revealed by the survey were as shown in table 5.28.

**Table 5.28 The decision to have a water supply**

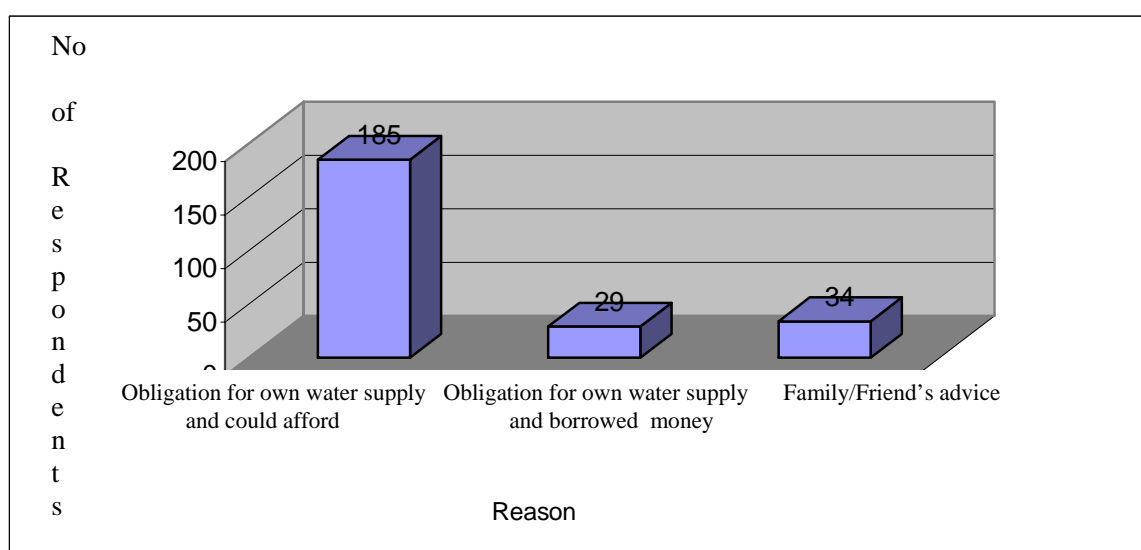
<b>Q 12 I FINALLY DECIDED TO PAY AND HAVE MY OWN WATER SUPPLY BECAUSE: (<i>More than one answer</i>)</b>	<b>No. of respondents</b>	<b>% n = 220</b>
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<i>possible)</i>		
I was obliged to have a water supply of my own and I had the money	187	85.0
I was obliged to have a water supply of my own and I borrowed the money	29	13.2
I took the advice of my family and friends	34	15.5

The decision of the respondents in table 5.28 is depicted in figure 5.27.

**Fig. 5.27 The consumer's decision to have a water supply**



The replies reflect much on the behaviour of domestic water consumers in Mauritius. 220(100%) of the respondents finally took a domestic water supply of their own. Out of the 220 respondents, 187 (85%) had the money and 29 (13.2%) borrowed it in order to pay for their water supply. It is noted that the problem recognition emanating from unfulfilled needs was such that they were 'obliged' to have their own water supplies. 29 (13.2%) of the respondents who borrowed money for the purpose were among those who were discouraged as they found the price of a domestic water supply too expensive (section 5.9 p. 250). In 34 (15.5%) of cases, the respondents were advised by social groups, family and friends in their final decision-making.

It is noted from the consumer survey that factors responsible for influencing the decision-making by the consumer were individual, economic, social and situational. Sections 2.12 (p.54) and 2.13 (p. 62) of the literature review further deal with these aspects of consumer behaviour. The individual factors include absence of a water connection at the individual's place (Q 2.1), new ownership of house (Q 2.2), status (Q 2.4), personal obligation (Q 12.1, Q 12.2). The economic factors include affordability (Q 2.3) and income (Q 40). Social factors are neighbour (Q 2.1), family and friends (Q 2.5). Situational factors are relationship with neighbour (Q 2.5), new ownership of house (Q 2.2) and finance (Q 2.3).

The decision-making process finally leads the consumer to make his decision. This decision is termed as 'decision/action' which takes place in field three of the Nicosia model. In the Howard and Seth model it is termed as 'purchases', in the Engel-Blackwell model as 'choice', in the Engel-Blackwell-Miniard model as 'purchase' and in the integrated model as 'choice/purchase'.

The survey shows that for the greater majority of the respondents, money was not a constraint when they needed a domestic water supply. Water is of such importance that the small minority (13.2%) who had financial constraint borrowed money to acquire a water connection for their domestic use. For these people, the problem was extended and required their high involvement in decision-making.

Whatever the financial constraint and whatever the position on the economic scale, the respondent is deemed to have acted rationally in his decision to acquire a water supply. Many an economist has viewed the consumer as rational beings. Katona is one of them (Du Plessis 1991:7). According to Katona, consumers' motives and objectives change and adapt to various circumstances and awareness of problems and solutions under exceptional circumstances are a result of rational behaviour. The consumer uses his money on a priority basis according to his needs. In this context, the economic theory of marginal

utility becomes equally applicable whereby the consumer would choose a combination of products such that the marginal utility of various kinds of needs would be equated and the value of the last need of each kind would be the same.

In their decision to acquire a domestic water supply, 15.5% of the respondents followed the advice of their family and friends. Water is an item which affects every member of the family and concerns therewith are quite understandable. Influences of social groups may be present in all phases of consumer behaviour. This aspect is apparent in field one of the Nicosia model. In the Howard and Seth model, it comes out as a 'social' input. In the Engel-Blackwel model, it is presented as 'external influence'; while in the Engel-Blackwell-Miniard model, it stands as 'social influences'. In the integrated model, such influences are shown as 'social' decision variables.

The decision to acquire a water supply has more than one meaning for the consumer. This decision can be situated within the personality theories. The consumer having listened to the advice of his family and friends (Q12.3) can be viewed to have satisfied his ego and superego referred to in the psychoanalytical theory of personality of Sigmund Freud (section 2.11.2 p. 50). The consumer is seen as making use of his better judgement. The behaviour of the consumer can equally be viewed within the Neo-Freudian social theories (section 2.11.3 p. 51). The personality of the consumer comes out enhanced through his decision in relation to his friend and his family members. This personality gets further improved as the consumer is no longer dependent on his neighbour for his water supply. The decision of the consumer can be said to have a positive effect on his self-image (section 2.11.5 p. 53). The consumer having been able in one way or other to provide for a basic need of his family certainly has his image improved in his social environment.

### **5.13 THE SERVICE: INSTALLATION OF WATER SUPPLY**

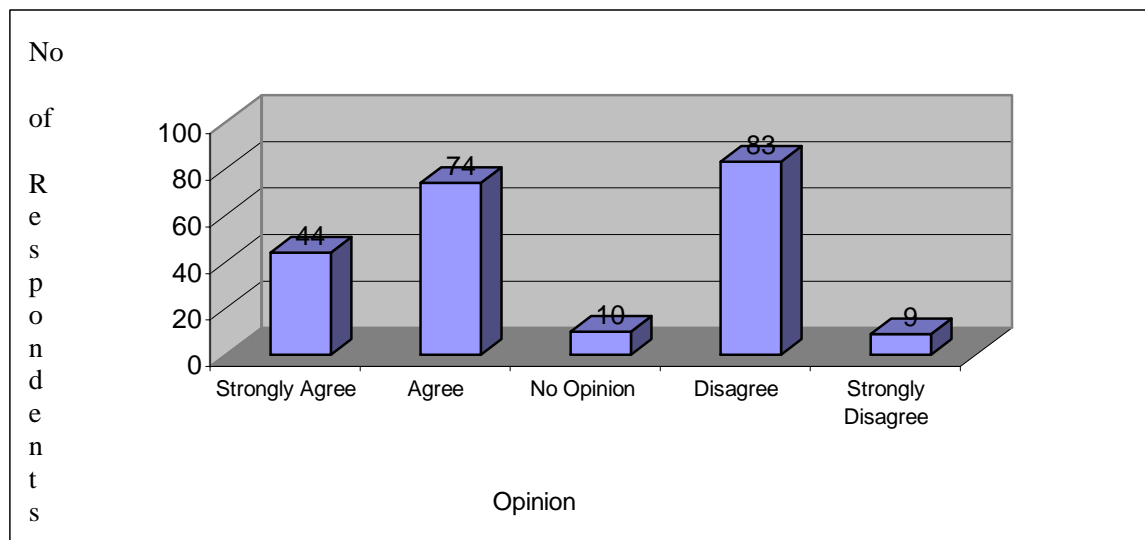
The time taken to provide a service is an important factor which determines the satisfaction or otherwise of the customer. Question 13 establishes the opinion of the customer as regards the time taken by the CWA to install their water supplies. Respondents replied as shown in table 5.29:-

**Table 5.29 Time taken to install water supplies**

<b>Q 13 THE TIME TAKEN BY THE CWA TO INSTALL MY WATER SUPPLY WAS LONG</b>	<b>No. of respondents</b>	<b>% n = 220</b>	<b>Cumulative %</b>
Strongly agree	44	20.0	20.0
Agree	74	33.7	53.7
No opinion	10	4.5	58.2
Disagree	83	37.7	95.9
Strongly disagree	9	4.1	100.0
<b>T O T A L</b>	<b>220</b>	<b>100</b>	<b>100</b>

The information table 5.29 is further shown in figure 5.28.

**Fig. 5.28 Time taken by CWA to install Water Supply was long**



With reference to table 5.29, it can be noticed that about 53.7% of the respondents interviewed found the time taken to install the supply long. Nevertheless some 83(37.7%) respondents disagreed and 9(4.1%) strongly disagreed that the period elapsed since an application is made and the supply delivered is long. Finally, 10 respondents amounting to 4.5% of the total number of the respondents could not emit any opinion on the question.

The supplies of 53.7% of respondents were not installed by the CWA within the time expected by them which therefore led to dissatisfaction. Dissatisfaction is further seen in replies to questions 23 and 25 (sections 5.21.1 & 5.21.2 pp. 306,310). These replies show that 23.2% of the respondents had registered a complaint with the CWA. Moreover, one third of the complaints were not dealt with to the satisfaction of the complainants.

Seen within the context of the hysteresis model of Hill (1985), the time taken by the CWA to install the water supply of 53.7% of the respondents can be classified as a dissatisfier (section 2.21 p. 96). In line with the same model, the delay for connecting the water supply can be said to be outside the zone of tolerance of the respondents. This delay constitutes a ground of complaint by the consumer. This would at the same time qualify the CWA as lagging behind a

total quality service to the consumer. The concept of total quality service has been discussed in section 2.22 ( p. 100).

Consumers' dissatisfaction has several implications as outlined in the models that have been discussed. In the Nicosia model, satisfaction/dissatisfaction influences experience and feedback. In the Howard and Seth model, it affects intention, attitude and confidence. In the Engel-Blackwell model and in the Engel-Blackwell-Miniard model, it impacts on intention, attitude, beliefs and outcomes. Likewise, in the integrated model, satisfaction/dissatisfaction differently affect the consumer's beliefs, attitudes and intentions as regards a product or service. In a majority of cases, the CWA takes longer to install the water supplies of potential domestic consumers in Mauritius than that expected by them. The opinion of the respondents deserves serious consideration for two reasons. First water is a vital commodity. Second, the supplier is in a monopoly situation. The supplier should therefore aim at meeting the expectations of the consumer.

The time taken by the CWA to fix water supplies has got serious implications. As per the present procedure, the potential subscriber pays the installation costs in advance to the CWA. On the other hand, as the CWA is the sole supplier of water in Mauritius, there does not seem to be any justification on the part of the latter for delay in the grant of water supplies. Moreover, good customer service requires meeting the expectation of the customer.

#### **5.14 CONFIDENCE**

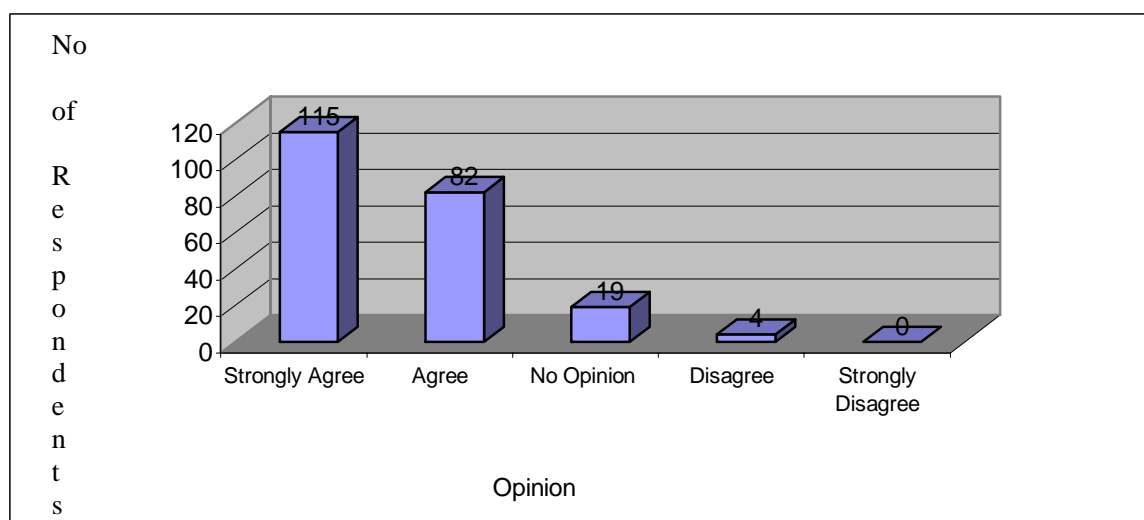
Confidence in a product or service is dependent on the benefit derived and/or previous hardship undergone in the absence of that product or service. Such confidence results in recommending the product or service to other consumers. This aspect is established by Question 14. The replies of the respondents were as in table 5.30:-

**Table 5.30 Advice to others to have a water supply**

<b>Q 14 I WOULD ADVISE CONSUMERS WITHOUT A WATER SUPPLY TO HAVE ONE OF THEIR OWN</b>	<b>No. of Respondents</b>	<b>% n = 220</b>	<b>Cumulative %</b>
Strongly agree	115	52.3	52.3
Agree	82	37.3	89.6
No opinion	19	8.6	98.2
Disagree	4	1.8	100
Strongly disagree	0	0	100
<b>TOTAL</b>	<b>220</b>	<b>100</b>	<b>100</b>

The replies in table 5.30 are graphically presented in figure 5.29 below:-

**Fig. 5.29 I would advise consumers to have a water supply**



Only 19 (8.6%) of the respondents expressed no opinion. 4 (1.8%) of respondents were not prepared to advise others to have a domestic water supply. However, 115 (52.3%) of respondents strongly agreed and 82(37.3%) agreed, (that is, 89% in all) that they would advise domestic water consumers without a water supply to have one of their own. This can be related to benefits derived.

It is relevant to note that public fountains which used to exist in villages and in suburban areas have been removed. The reason is that piped water

network is available in these areas and that the CWA is in a position to grant water supplies to potential subscribers. Public fountains exist in public places like public beaches for which the water charges are presently paid by the Ministry of Local Government.

The attitude of the respondents following their confidence in the CWA can be viewed within the tricomponent attitude model. 96% of the respondents were prepared to advise those without a water connection to have one. According to Schiffman and Kanuk (1996:242), the cognitive attitude component refers to a person's knowledge or perception about an object. Such cognition is acquired by the consumer's direct experience with the attitude object and the related information from other sources. Cant *et al* (2001:137) refer to Botha, Brink and Machado (1997) to explain the affective attitude component as involving feelings and emotions towards an object. The conative attitude component is concerned with the likelihood that a consumer would act in a particular way with regard to an attitude object (Schiffman & Kanuk, 1996:244) (section 2.14 p. 74). The attitude and confidence of the consumer in the CWA as seen in the present context is the result of his experience and is therefore viewed as the cognitive component of the tricomponent attitude model. The replies to Question 14 contained in table 5.30 (p.275) reveal the feeling of emotion of the respondents towards the persons who do not have a water connection. This feeling of emotion is the affective component of the tricomponent attitude model. Finally, the replies of the respondents imply the likelihood that they would behave in same manner towards those without a water connection. Thus, this attitude of the respondents can be said to satisfy the conative component of the tricomponent attitude model.

### **5.15 NEEDS SATISFACTION**

One important aspect of the survey is to attempt to establish whether or not the water related needs of domestic water consumers in Mauritius are satisfied. The replies of respondents to Question 15 were as in figure 5.31:-

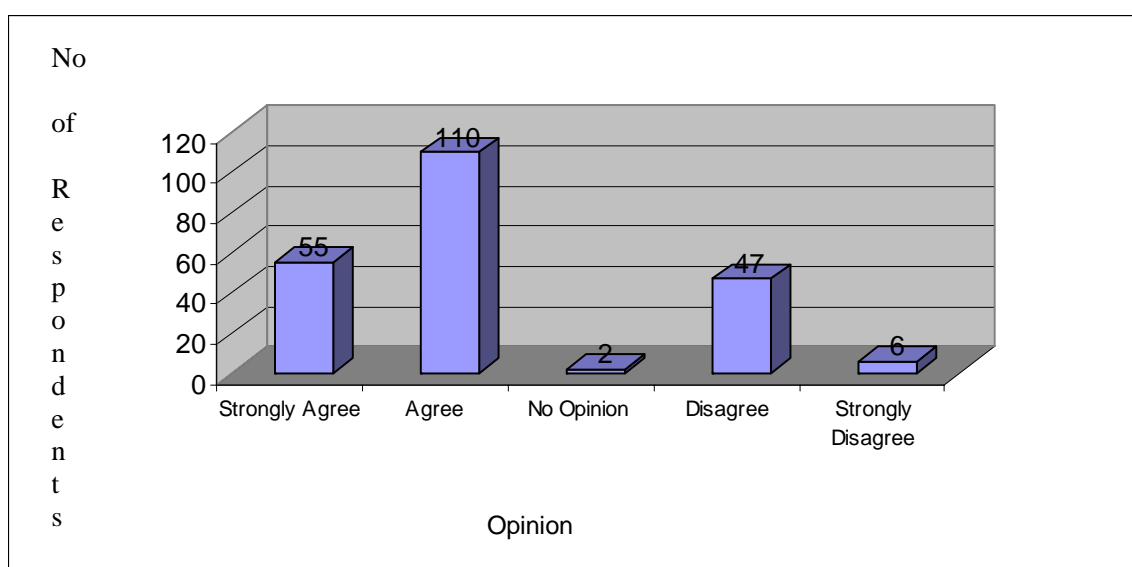


**Table 5.31 Satisfaction of water related needs**

<b>Q 15 My water related needs are well satisfied with the supply of water to me.</b>	<b>No. of Respondents</b>	<b>% n = 220</b>	<b>Cumulative %</b>
Strongly agree	55	25.0	25.0
Agree	110	50.0	75.0
No opinion	2	0.9	75.9
Disagree	47	21.4	97.3
Strongly disagree	6	2.7	100
<b>TOTAL</b>	<b>220</b>	<b>100</b>	<b>100</b>

The information in table 5.31 is depicted in figure 5.30.

**Fig. 5.30 Water Related Needs were well satisfied**



According to table 5.31 and figure 5.30, 75% of the respondents believed that their water related needs were satisfied by the supply of water. 21% disagreed; while only 6 respondents, that is only 2.7% strongly disagreed with this view. In other words, in 75% of the cases, the water related needs of the respondents were well-satisfied. This is supported by the replies to question 16 to which 75% of the respondents stated that the volume of water supplied to them was sufficient (section 5.16 below).

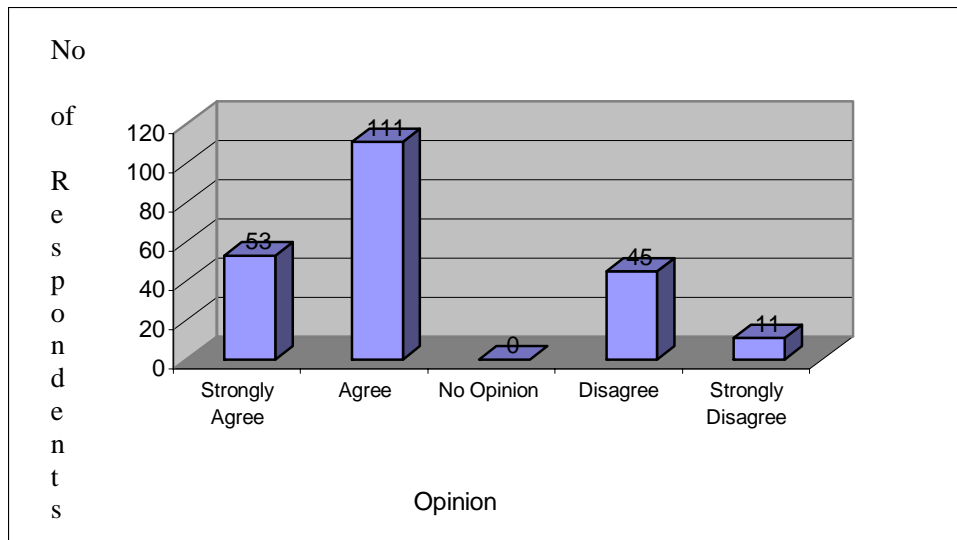
### 5.16 SUFFICIENCY OF SUPPLY

Question16 is directly related to the previous question 15. Satisfaction derived from a product is, inter-alia, related to the volume demanded and supplied. Respondents replied as shown in table 5.32 and in figure 5.31 as regards the volume of water supplied to them:

**Table 5.32 Volume of water supplied was sufficient**

Q 16 The volume of water supplied to me is sufficient	No. of Respondents	% n = 220	Cumulative %
Strongly agree	53	24.0	24.0
Agree	111	50.5	74.5
No opinion	0	0.0	74.5
Disagree	45	20.5	95.0
Strongly disagree	11	5.0	100
<b>TOTAL</b>	<b>220</b>	<b>100</b>	<b>100</b>

**Fig 5.31 Volume of water supplied was sufficient**



53(24%) and 111 (50.5%) of the respondents respectively declared strongly agreeing and agreeing that the volume of water supplied to them was sufficient. In contrast, 45 (20.5%) and 11(5%) of the respondents respectively disagreed and strongly disagreed with this view. It is noted that replies relating to

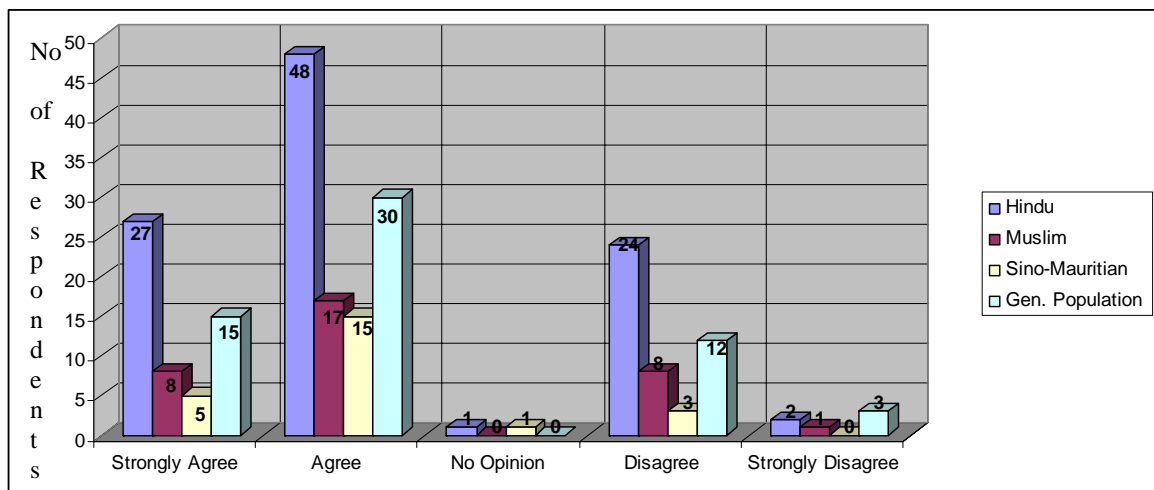
sufficiency of water being supplied and water related needs being satisfied are almost the same (sections 5.13 and 5.14 pp.272,274). This assertion is in line with replies to question 28 where 75% of the respondents indicated that the volume of water supplied in general by the CWA across the country was sufficient (section 5.23 p.318).

The satisfaction of water related needs are crosstabulated in tables 5.33 to 5.35 against Ethnic groups, Occupational groups and Residential regions and are graphically presented in figures 5.32 to 5.34.

**Table 5.33 Crosstabulation of Water Related Needs Being Well Satisfied and Ethnic Groups**

Water related Needs were well satisfied	ETHNIC GROUPS								Total
	Hindu	% n = 102	Muslim	% n = 34	Sino Mtian	% n = 24	Gen. Pop	% n = 60	
Strongly Agree	27	26.4	8	23.5	5	20.8	15	25.0	55
Agree	48	47.1	17	50.0	15	62.5	30	50.0	110
No Opinion	1	1.0	0	0	1	4.2	0	0	2
Disagree	24	23.5	8	23.5	3	12.5	12	20.0	47
Strongly Disagree	2	2.0	1	3.0	0	0	3	5.0	6
<b>TOTAL</b>	<b>102</b>	<b>100</b>	<b>34</b>	<b>100</b>	<b>24</b>	<b>100</b>	<b>60</b>	<b>100</b>	<b>220</b>

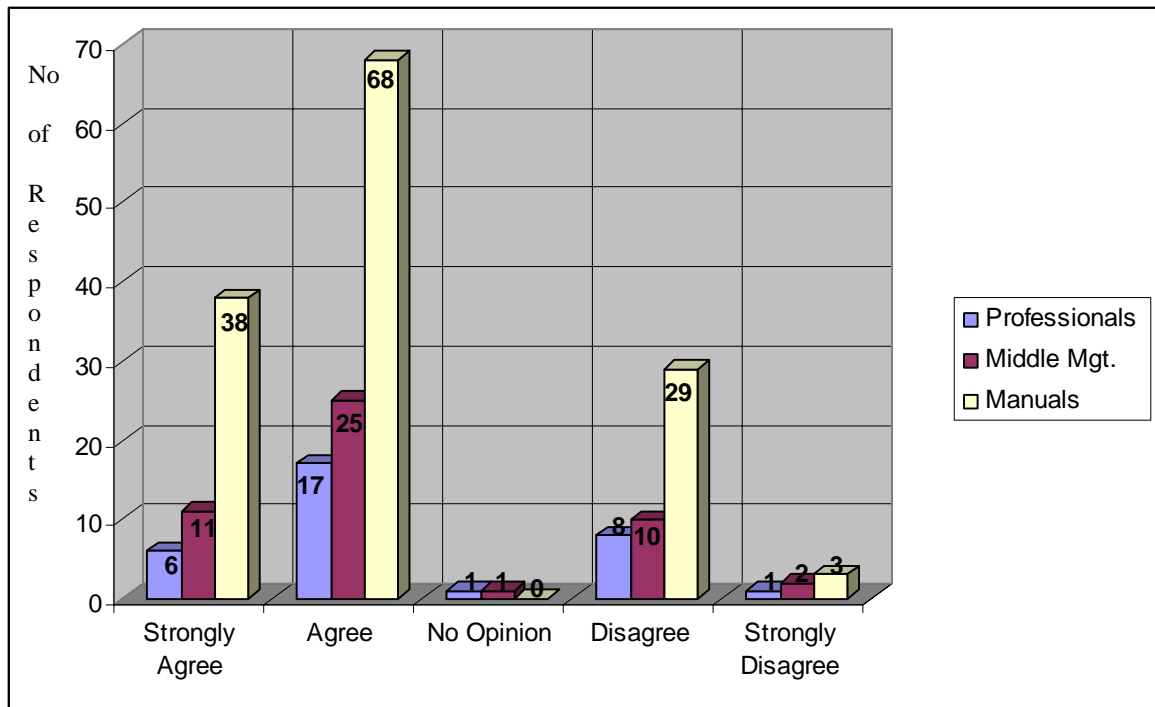
**Fig 5.32 Water Related Needs Being well satisfied and Ethnic Groups**



**Table 5.34 Crosstabulation of Water Related Needs Being Well Satisfied and Occupational Groups**

Water related Needs were well Satisfied	OCCUPATIONAL GROUPS						Total
	Professionals	% n = 33	Middle Mgt.	% n = 49	Manuals	% n = 138	
Strongly Agree	6	18.2	11	22.5	38	27.5	55
Agree	17	51.6	25	51.0	68	49.3	110
No Opinion	1	3.0	1	2.0	0	0	2
Disagree	8	24.2	10	20.4	29	21.0	47
Strongly Disagree	1	3.0	2	4.1	3	2.2	6
<b>TOTAL</b>	<b>33</b>	<b>100</b>	<b>49</b>	<b>100</b>	<b>138</b>	<b>100</b>	<b>220</b>

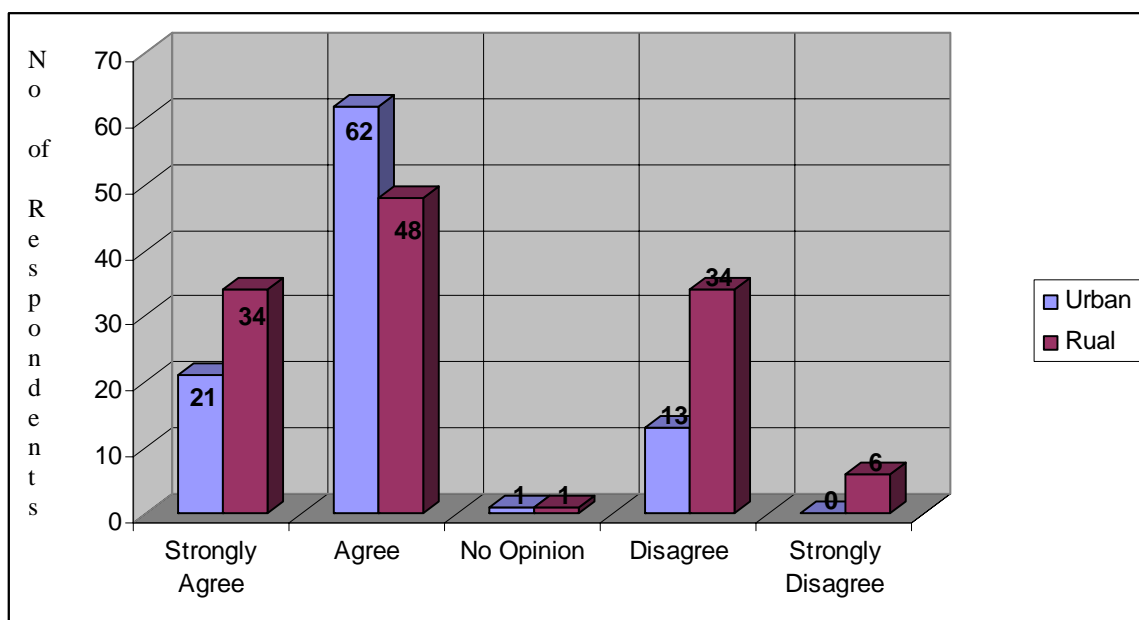
**Fig 5.33 Water Related Needs being well satisfied and Occupational Groups**



**Table 5.35 Crosstabulation of Water Related Needs Being Well Satisfied and Residential Regions**

Water related needs being well satisfied	RESIDENTIAL REGIONS				
	Urban	% n = 97	Rural	% n = 123	Total
Strongly Agree	21	21.7	34	27.7	55
Agree	62	63.9	48	39.0	110
No Opinion	1	1.0	1	0.8	2
Disagree	13	13.4	34	27.7	47
Strongly Disagree	0	0	6	4.8	6
<b>TOTAL</b>	97	100	123	100	220

**Fig 5.34 Water Related Needs being well satisfied and Residential Regions**



About 75% of Hindus, Muslims and General Population stated that their water related needs were well satisfied. The figure for Sino-Mauritians was slightly higher, that is 83%. On the other hand, about 25% of Hindus, Muslims and General Population expressed a contrary view as compared to 12.5% of Sino-Mauritians. These results indicate that water related needs of the greater majority of all the ethnic groups were almost equally well satisfied. As regards the occupational groups, the figures show that the greater majority of each of the occupational groups were also equally well satisfied. The figures vary between 73.5% and 79.8% of the respondents. Thus satisfaction or otherwise of

water related needs cannot be viewed as being influenced by ethnic or occupational factors.

95.6% of urban residents declared their water related needs being satisfied as against 66.7% of rural residents. This aspect is worthy of note. It emanates from the water supply situation in the local context where the supply in urban areas is relatively better than that in rural areas in that the former generally benefit from longer hours of supply compared to the latter.

Needs satisfaction and sufficiency of water supply were, among others, responsible for customer satisfaction. These two elements can be viewed within the ideas mentioned by Cronin *et al* (2001:193) (section 2.20 p. 94). The authors (2001:193) rely on Bagozzi (1992) and report that 'favourable service quality perception leads to improved satisfaction and value attribution and that positive value directly influences satisfaction. The same authors further report that :-

- 'The service management literature argues that customer satisfaction is the result of a customer's perception of the value received .. where value equals perceived service quality relative to price ...' (Hallowell, 1996:29)
- 'The first determinant of overall customer satisfaction is perceived quality ... the second determinant of overall customer satisfaction is perceived value ..' ( Fornell *et al.*, 1996:9)
- 'Customer satisfaction is recognised as being highly associated with 'value' and .... is based, conceptually, on the amalgamation of service quality attributes with such attributes as price ...' (Athanasopoulos, 2000:192)

Seen in the light of these views, it may be said that the satisfaction of the 75% of the respondents as revealed by question 16 of the survey was due to the

quality of service provided, namely, by the sufficient volume of water which was supplied. This volume of water allowed the water related needs of the respondents to be well satisfied. Literature on quality in section 2.22 (pp.100 - 106) specifies not only quality as a means towards achieving consumer satisfaction; but equally emphasizes the continuous evaluation of the customers' expectations and satisfaction and closing of the gap, if any (Lovelock, 1996). The quality of service, that is, sufficiency of water supply to 75% of the respondents was responsible for this satisfaction. However, such satisfaction can only be maintained by constantly monitoring the expectation of all the consumers and by improving the service accordingly. Seen within the hysteresis model, (Hill 1985) (section 2.23 p. 98) the water supply to the 75% of the respondents can be qualified as satisfiers, and within their zone of tolerance. On the other hand, the water supply to 25% of the respondents who were not satisfied therewith can be viewed as dissatisfiers and outside their zone of tolerance.

Needs satisfaction is an important element in the models that have been discussed. It is seen in the experience undergone by the consumer in field four of the Nicosia model. Satisfaction is in the learning constructs in the Howard and Sheth model. In the Engel-Blackwell and in the Engel-Blackwell-Miniard models, satisfaction/ dissatisfaction is seen as outcome. The same scenario is seen in the integrated model. The survey reveals that 75% of the respondents had their water related needs satisfied. An equal percentage was receiving water in sufficient quantity. This feedback is important for the supplier in that 25% of the consumers were dissatisfied as they were not receiving water in sufficient quantity. The attitude and beliefs of these consumers towards the CWA cannot but be adverse. This has serious implications for the supplier. Improvement in water supply in Mauritius is required to satisfy consumers in areas where water supply is deficient.

## **5.17 PRICE**

The price of a commodity is such an important factor that it cannot be

overlooked in a study of consumer behaviour. Price influences consumer behaviour to a large extent. This is present in all the models that have been reviewed. In the Nicosia model, the consumer evaluates the means and ends. In the Howard and Sheth model, price is in the significative and in the symbolic input stimuli. In both the Engel-Blackwell and in the Engel-Blackwell-Miniard models, it is seen in the marketer dominated stimuli. In the integrated model, price is in the evaluation criteria. The consumer's perception of the domestic water tariff in Mauritius is established by Question 17 as shown in table 5.36.

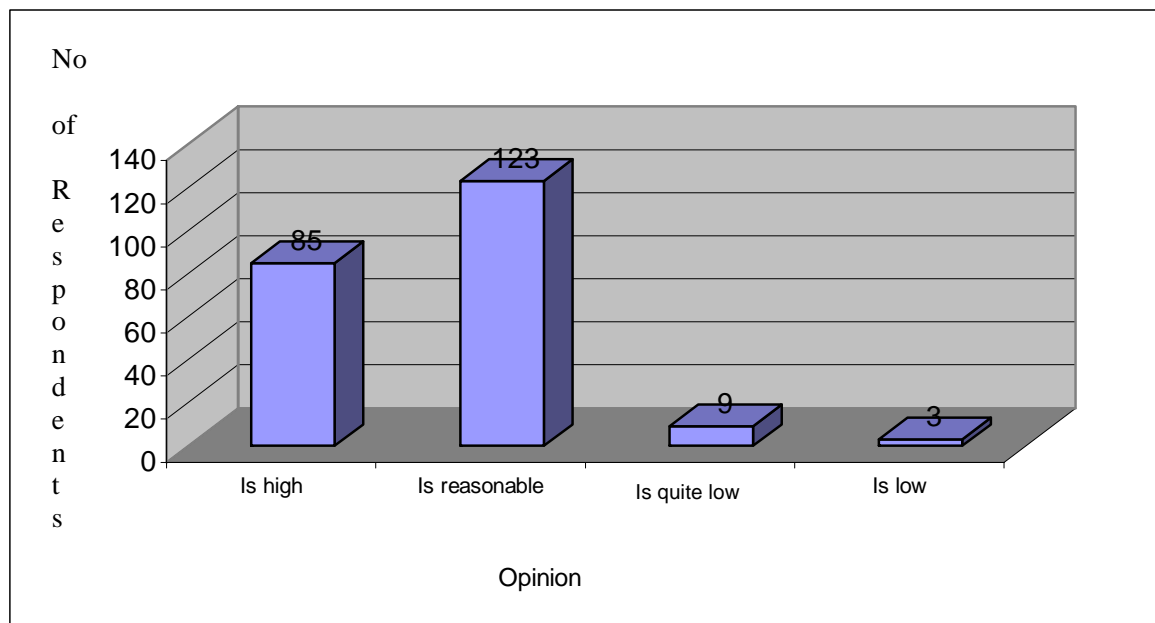
**Table 5.36 Perception of the domestic water tariff**

<b>Q 17 The domestic water tariff in Mauritius: (Only one reply to be given)</b>	<b>No. of Respondents</b>	<b>% n = 220</b>	<b>Cumulative %</b>
Is high	85	38.6	38.6
Is reasonable	123	55.9	94.5
Is quite Low	9	4.1	98.6
Is low	3	1.4	100.0
<b>TOTAL</b>	<b>220</b>	<b>100</b>	<b>100</b>

The results in table 5.36 are also reproduced by the following figure 5.35 :-

**Fig 5.35 Perception of the domestic water tariff**





85 (38.61%) of the respondents found the domestic water tariff to be high. 123 (55.9%) of the respondents found it reasonable, 9 (4.1%) found it quite low; while 3 (1.4%) found it low. This also nearly coincides with the reply to question 6 where an almost similar percentage (44.1%) of respondents found the installation costs of domestic water supply to be high (section 5.9 p. 250). The consumer's perception of price is often income-related. It is noted that the 38.6% of the respondents who perceived the domestic water tariff as high were among those whose income did not exceed MUR 10,000 per month. On the other hand, 61.4% of the respondents found the domestic water tariff to be reasonable, quite low or low. The conclusion that can be drawn is that the domestic water tariff in Mauritius may be considered to be a burden to a substantial proportion of the local population.

As shown in Appendix A, the domestic water tariff in Mauritius is progressive, that is, a higher tariff is applicable for a higher consumption band. This tariff structure is justified for a limited vital resource in order to reduce wastage by the consumer. It is to be noted that domestic consumers in the lower economic scale have been duly considered in that they are required to pay a

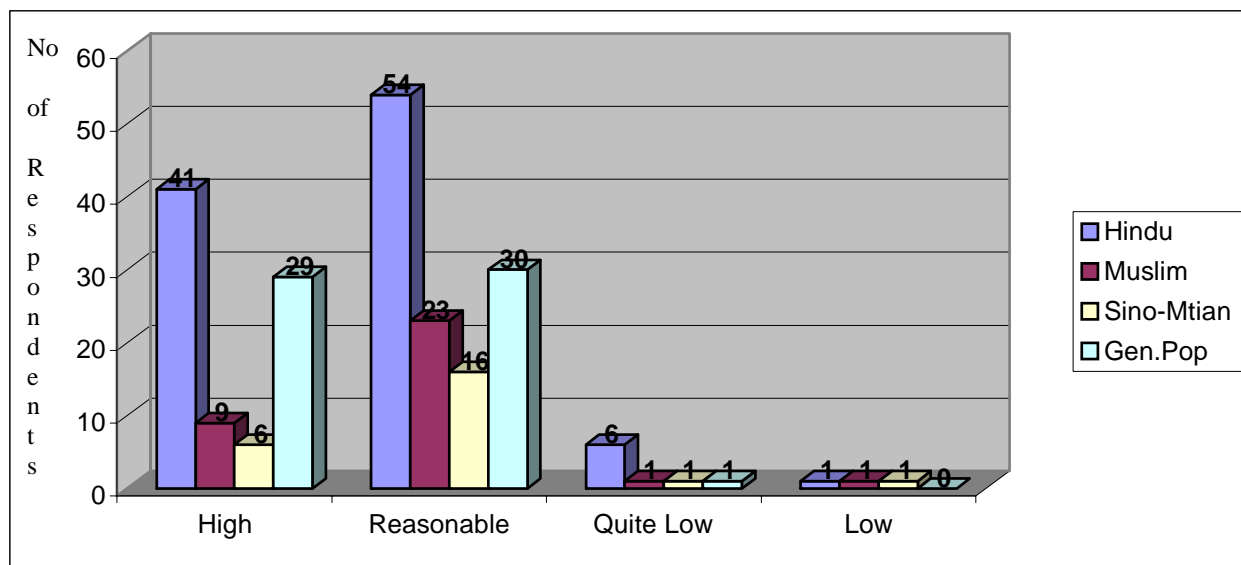
base charge of MUR 55.00 per month including MUR 10.00 meter rent for the first 10m<sup>3</sup> which is to their advantage. This volume of water, it is felt, may fulfill the basic needs of a normal family. Finally, it is to be appreciated that the tariff structure of water in Mauritius is such that the domestic category is cross-subsidized by the non-domestic categories to which higher tariffs apply (Appendix A). The survey shows that the greater majority of consumers of domestic water in Mauritius are satisfied with the water tariff applicable to them.

The perception of consumers on the domestic water tariff is crosstabulated in tables 5.37 to 5.39 against Ethnic groups, Occupational groups and Residential regions and graphically shown in figures 5.36 to 5.38.

**Table 5.37 Crosstabulation of Perception on Domestic Water Tariff and Ethnic Groups**

Perception on Domestic Water Tariff	ETHNIC GROUPS								Total
	Hindu	% n = 102	Muslim	% n = 34	Sino Mtian	% n = 24	Gen. Pop	% n = 60	
High	41	40.2	9	26.5	6	25.0	29	48.3	85
Reasonable	54	52.9	23	67.7	16	66.6	30	50.0	123
Quite Low	6	5.9	1	2.9	1	4.2	1	1.7	9
Low	1	1.0	1	2.9	1	4.2	0	0	3
<b>TOTAL</b>	<b>102</b>	<b>100</b>	<b>34</b>	<b>100</b>	<b>24</b>	<b>100</b>	<b>60</b>	<b>100</b>	<b>220</b>

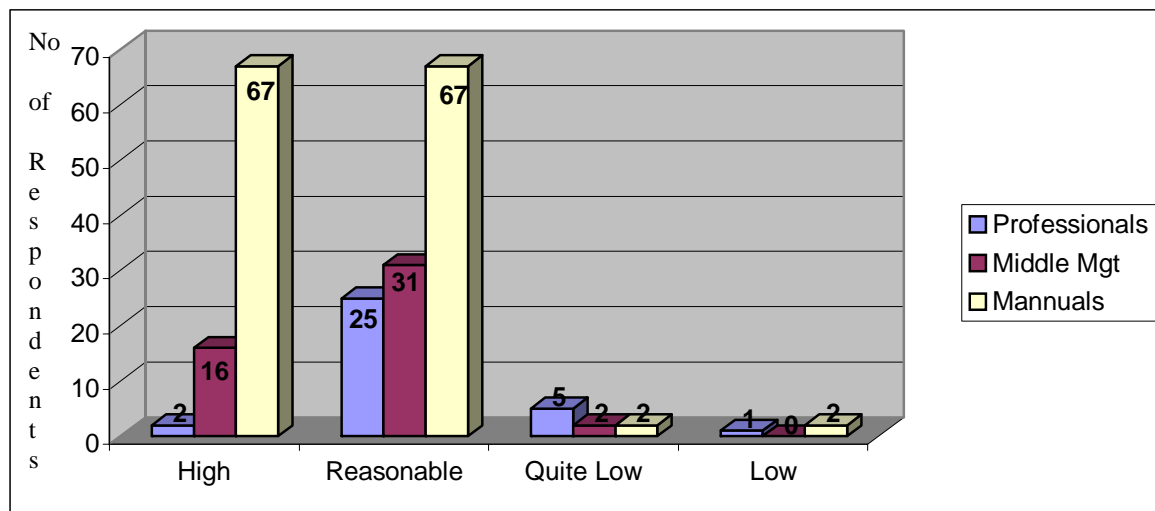
**Fig 5.36 Perception on Domestic Water Tariff and Ethnic Groups**



**Table 5.38 Crosstabulation of Perception on Domestic Water Tariff and Occupational Groups**

Perception on Domestic Water Tariff	OCCUPATIONAL GROUPS						Total
	Professionals	% n = 33	Middle Mgt.	% n = 49	Manuals	% n = 138	
High	2	6.1	16	32.6	67	48.6	85
Reasonable	25	75.7	31	63.3	67	48.6	123
Quite Low	5	15.2	2	4.1	2	1.4	9
Low	1	3.0	0	0	2	1.4	3
<b>TOTAL</b>	<b>33</b>	<b>100</b>	<b>49</b>	<b>100</b>	<b>138</b>	<b>100</b>	<b>220</b>

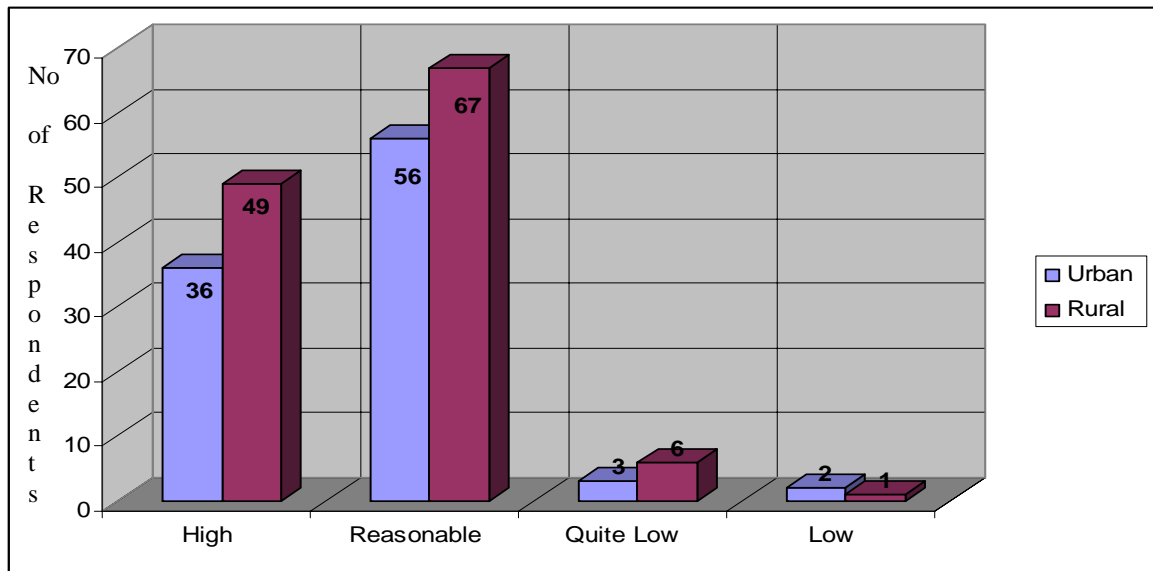
**Fig 5.37 Perception on Domestic Water Tariff and Occupational Groups**



**Table 5.39 Crosstabulation of Perception on Domestic Water Tariff and Residential Areas**

Perception on Domestic Water Tariff	RESIDENTIAL REGIONS				Total
	Urban	% n = 97	Rural	% n = 123	
High	36	37.1	49	39.8	85
Reasonable	56	57.7	67	54.5	123
Quite Low	3	3.1	6	4.9	9
Low	2	2.1	1	0.8	3
<b>TOTAL</b>	<b>97</b>	<b>100</b>	<b>123</b>	<b>100</b>	<b>220</b>

**Fig 5.38 Perception on Domestic Water Tariff and Residential Regions**



The picture that emerges from the above cross tabulations indicates some differences in perceptions among the ethnic groups. 40.2% of Hindus and 48.3% of the General Population qualified the domestic water tariff as high. On the other hand, 6.9% of Hindus and 8.4% of General Population found the domestic water tariff as quite low and low. However, the percentage of Hindus and of General Population who found the tariff to be reasonable was almost the same, that is, around 50%. About 25% of Muslims and of Sino-Mauritians qualified the tariff as high; while about 67% of them found it to be reasonable. On the other hand, 5.8% of Muslims and 8.4% of Sino-Mauritians found the tariff as quite low and low. The observation that can be made is that the pattern among Muslims and Sino-Mauritians was almost the same. Also the percentage of these two ethnic groups who found the tariff to be high was less than those of the other two groups. At the same time, a greater percentage of Muslims and Sino-Mauritians found the tariff to be reasonable compared to those of the other two groups. It is worth noting that one common factor among Muslims and Sino-Mauritians is that both groups are generally associated with the commercial sector which explains to some extent their perceptions on the domestic water tariff as being similar.

As far as occupational groups are concerned, professionals/managers are

on top of the social ladder followed by middle management/ administrative staff and by manual/unskilled workers. Thus, the percentage of consumers who qualified the water tariff as high was least among professionals/managers and highest among manual/unskilled workers. This pattern is consistent, among the occupational groups. The percentages of domestic consumers who qualified the water tariff as reasonable was highest among the professionals/managers and least among manual/unskilled workers. The same pattern is seen among the occupational groups who found the water tariff as quite low and low.

The percentage of domestic consumers who qualified the water tariff as high was slightly higher among rural residents compared to those in urban areas; while the percentage of those who found it to be reasonable was lower among rural than among urban residents. These differences in perceptions can to some extent be attributed to be the fact that water supply in urban areas is relatively better than that in rural areas. The percentage of urban and rural residents who found the water tariff to be quite low and low was almost the same.

Literature relates value of a product to its price (section 2.20 p. 94), for example, according to Hallowell (1996) as reported by Cronin *et al* (2001:193), '..... value equals perceived service quality of price.' This could be true; but not in the case of water in Mauritius. As per table 5.36, 38.6% of the respondents qualified the domestic water tariff in Mauritius as high; while 5.5% qualified as quite low and low. It is a fact that the price of water in Mauritius is not subject to the market force of supply and demand. It does not mean that water represented a greater value for the 38.6% of the respondents who qualified the domestic water tariff as high. It also does not mean that water was of lower value to 5.5% of the respondents who qualified its tariff as quite low and low. Water fulfils the same demand of man across the world. Its demand is in accordance with man's needs. The observation that can be made is that the opinions expressed in table 5.36 are more in relation to the paying power of the respondents than to anything

else.

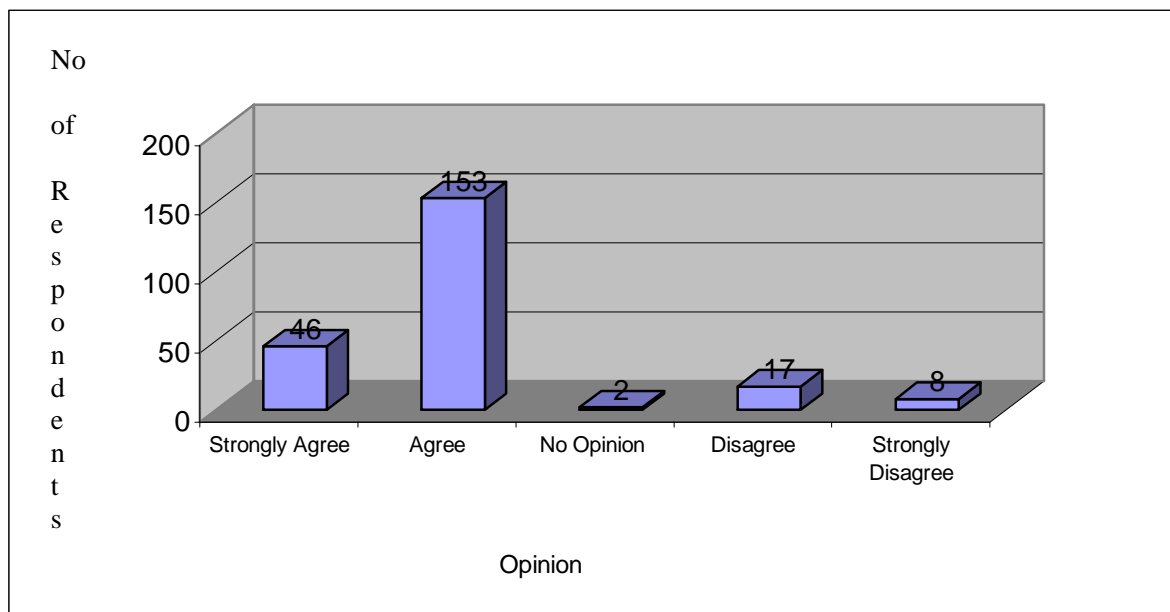
### 5.18 QUALITY OF PRODUCT

The quality of domestic water in Mauritius as perceived by the respondents is established by Question 18 and is as shown in table 5.40 and in figure 5.39.

**Table 5.40 Drinking Quality of domestic water**

Q 18 The drinking quality of water supplied to me is good	No. of Respondents	% n = 220	Cumulative %
Strongly agree	46	20.9	20.9
Agree	153	69.6	90.5
No opinion	2	0.9	91.4
Disagree	17	7.7	99.1
Strongly disagree	8	0.9	100
Total	220	100	100

**Fig 5.39 Drinking Quality of domestic water is good**



The survey revealed that 90.5% (199) of the respondents at least agreed

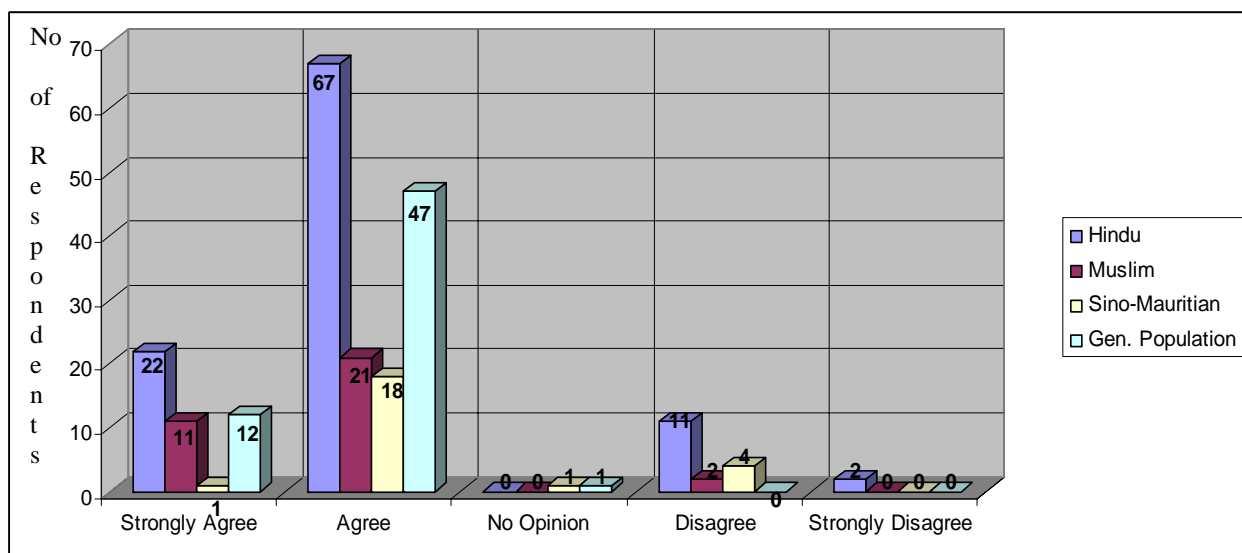
that the quality of drinking water was good. Only 25 (8.6%) of the respondents disagreed and strongly disagreed that such quality was to their ideal standard. As far as the perception on quality is concerned, replies to question 21 indicate that 10.9% of the respondents consumed bottled water because they lacked confidence in CWA water (section 5.20 and table 5.47 pp. 298, 299).

The information contained above are further analysed by means of cross tabulations in tables 5.41 to 5.43 against the three main variables and are graphically displayed in figures 5.40 to 5.42.

**Table 5.41 Crosstabulation of Drinking Quality of Water and Ethnic Groups**

Drinking quality of water is good	ETHNIC GROUPS								Total
	Hindu	% n = 102	Muslim	% n = 34	Sino Mtian	% n = 24	Gen. Pop	% n = 60	
Strongly Agree	22	21.6	11	32.3	1	4.2	12	20.0	46
Agree	67	65.7	21	61.8	18	75.0	47	78.3	153
No Opinion	0	0	0	0	1	4.2	1	1.7	2
Disagree	11	10.8	2	5.9	4	16.6	0	0	17
Strongly Disagree	2	1.9	0	0	0	0	0	0	2
<b>TOTAL</b>	<b>102</b>	<b>100</b>	<b>34</b>	<b>100</b>	<b>24</b>	<b>100</b>	<b>60</b>	<b>100</b>	<b>220</b>

**Fig 5.40 Drinking quality of Water is good and Ethnic Groups**



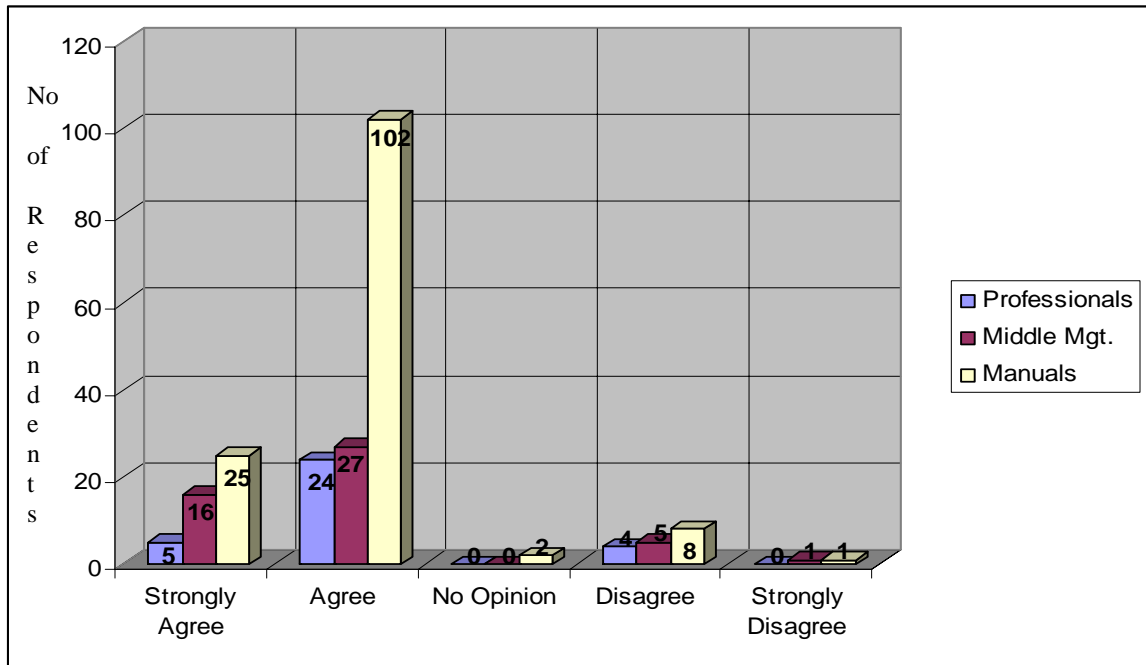
**Table 5.42 Crosstabulation of Drinking Quality of Water and Occupational**



### Groups

Drinking quality of water is good	OCCUPATIONAL GROUPS						Total
	Professionals	% n = 33	Middle Mgt.	% n = 49	Manuels	% n = 138	
Strongly Agree	5	15.2	16	32.7	25	18.1	46
Agree	24	72.7	27	55.1	102	73.9	153
No Opinion	0	0	0	0	2	1.5	2
Disagree	4	12.1	5	10.2	8	5.8	17
Strongly Disagree	0	0	1	2.0	1	0.7	2
<b>TOTAL</b>	<b>33</b>	<b>100</b>	<b>49</b>	<b>100</b>	<b>138</b>	<b>100</b>	<b>220</b>

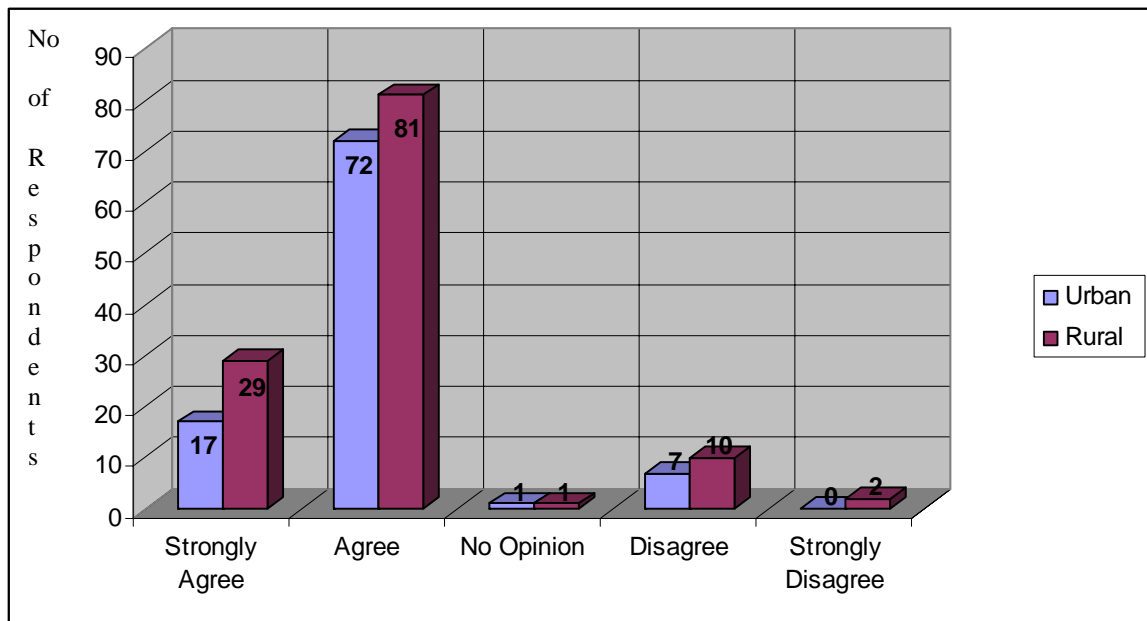
**Fig 5.41 Drinking Quality of Water is good and Occupational Groups**



**Table 5.43 Crosstabulation of Drinking Quality of Water and Residential Regions**

Drinking quality of water is good	RESIDENTIAL REGIONS				Total
	Urban	% n = 97	Rural	% n = 123	
Strongly Agree	17	17.5	29	23.6	46
Agree	72	74.3	81	65.9	153
No Opinion	1	1.0	1	0.8	2
Disagree	7	7.2	10	8.1	17
Strongly Disagree	0	0	2	1.6	2
<b>TOTAL</b>	<b>97</b>	<b>100</b>	<b>123</b>	<b>100</b>	<b>220</b>

**Fig 5.42 Drinking Quality of water is good and Residential Areas**



The total percentage of each ethnic group who strongly agreed and agreed that the drinking quality of water was good was 98.3% for the General Population, 94% for Muslims, 87.3% for Hindus and 79.2% for Sino-Mauritians. It is observed that the figure is slightly lower for Sino-Mauritians compared to the other ethnic groups.

The percentage of professionals/managers and middle managers/administrative staff who qualified the drinking quality of water as good was almost identical, that is 87.9% and 87.8% respectively compared to 92.0% of the manual and unskilled workers. This can to some extent be explained by the fact that exigency for quality among professionals and managerial cadres is generally considered to be higher than that in manual and unskilled workers.

Finally, the proportion of urban and rural residents who considered the drinking quality of water as good was almost the same, that is about 90%. This high percentage is due to the attention given by the CWA to ensure the quality of drinking water throughout the country.

The quality of a product is an important factor responsible for consumer

behaviour. This aspect is well contained in all the models that have been reviewed. Quality has a direct effect on the experience of the consumer and on feedback from the latter in the Nicosia model. In the Howard and Sheth model, quality is displayed by the marketer as an input stimulus. In this model, satisfaction is, inter-alia, a result of quality. In the Engel-Blackwell model and in the Engel-Blackwell-Miniard model, quality is a marketer dominated stimulus and determines choice, outcomes, satisfaction and dissonance. In the integrated model, satisfaction is indicative of quality. The survey revealed that 90.6% of the respondents qualified the drinking quality of water in Mauritius as good and only 8.6% did not find it so. It is also noted from replies to Question 19 that 8.1% of the respondents were prepared to pay a higher price for a better quality of drinking water (section 5.19 p. 296). Moreover, 5.9% of the respondents declared consuming bottled water very often. The conclusion that can be drawn is that those respondents who very often consumed bottled water were those who did not agree that the drinking quality of water was good and also included those who were prepared to pay a higher price for a better quality of water.

It is to be appreciated that great consideration is given in Mauritius to the quality of water. The CWA has a modern laboratory where the quality of water is constantly monitored. In addition to this, the Ministry of Health constantly monitors the quality of water provided by the CWA and carries out independent tests in its laboratory. The quality of drinking water in Mauritius has to meet World Health Organisation standards. The replies of the respondents and the control on quality exercised by the CWA and by the Ministry of Health show that the quality of drinking water in Mauritius is generally of acceptable level.

The quality of drinking water in Mauritius is an important item both for the health of consumers and for their confidence. The nearly 10% of domestic consumers who lack confidence in CWA water deserve close attention. The CWA should strive to create confidence in the consumers with facts and figures and through transparency.

Cronin *et al*, (2000:193 section 2.20 p 94) report the views of Hallowell (1996), Fornell(1996) and Athanassopoulos (2000) to explain consensus on the effects of quality, value and satisfaction. Cronin *et al* (2000:193) find a convergence of opinion in that 'favourable service quality perception leads to improved satisfaction and value attribution and that positive value directly influences satisfaction.' Taking into consideration the view of these authors, it can be inferred from the replies of the respondents to Question 18 contained in table 5.40 that the quality of drinking water in Mauritius is an item which greatly contributes towards consumer satisfaction in that respect. 90.5% of the respondents agreed that the drinking quality of CWA tap water was good. The quality of drinking water in Mauritius can also be qualified as a satisfier within the context of the hysteresis model of Hill (1985) (section 2.21.3 p. 98)

### 5.19 WILLINGNESS TO PAY MORE

Question 19 tries to establish the willingness of consumers of domestic water to pay more for a better service and for a better drinking quality of water. This willingness to pay more reveals much about consumer behaviour. Replies of the respondents were as in tables 5.44 and 5.45 and in figures 5.43 and 5.44.

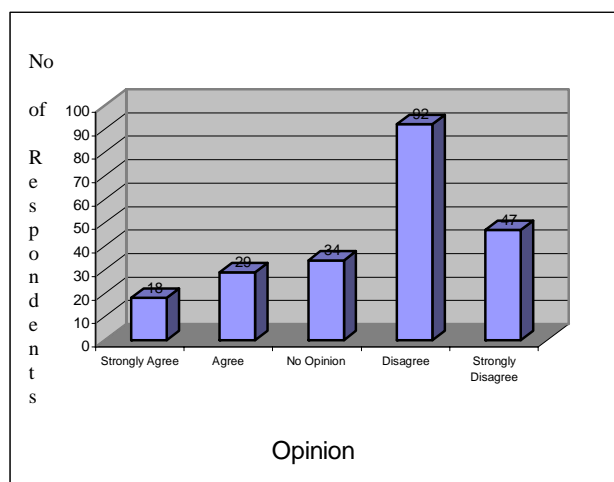
**Table 5.44 Willingness to pay more for a better service**

<b>Q 19.1 I accept to pay a higher tariff for a better service</b>	<b>No. of Respondents</b>	<b>% n = 220</b>	<b>Cumulative %</b>
Strongly agree	18	8.2	8.2
Agree	29	13.2	21.4
No opinion	34	15.4	36.8
Disagree	92	41.8	78.6
Strongly disagree	47	21.4	100.0
<b>Total</b>	<b>220</b>	<b>100</b>	<b>100</b>

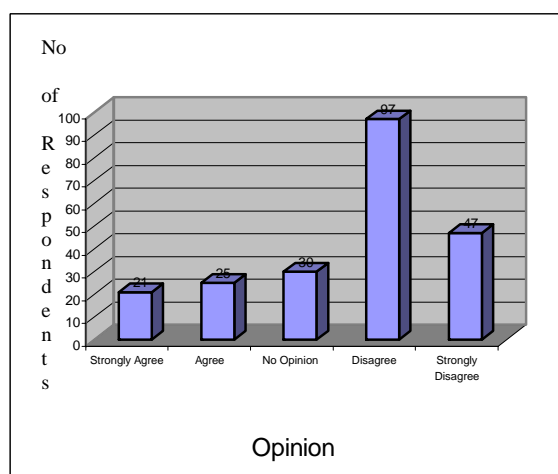
**Table 5.45 Willingness to pay more for a better quality**

Q 19.2 I accept to pay a higher tariff for a better quality of water	No. of Respondents	% n = 220	Cumulative %
Strongly agree	21	9.5	9.5
Agree	25	11.4	20.9
No opinion	30	13.6	34.5
Disagree	97	44.1	78.6
Strongly disagree	47	21.4	100
<b>Total</b>	<b>220</b>	<b>100</b>	<b>100</b>

**Figure 5.43 Willingness to pay for a better service.**



**Fig 5.44 Willingness to pay for a better quality of Water.**



Tables 5.44 and 5.45 show that with regards to both aspects of question 19 of the questionnaire, the distribution of responses are very similar. Hence, only a minority of respondents, that is 47 (21.4%) and 46 (20.9%) were respectively willing to pay more for a better service and for a better drinking quality of water. It is to be noted from replies to question 18, that only a minority of 8.6% of respondents disagreed that the quality of water provided by the CWA was good. At the same time, an almost similar percentage of the respondents, that is, 10.9%, declared that they consumed bottled water as they lacked confidence in CWA water. On the other hand, only a minority of respondents, that is, 11.0%, disagreed and strongly disagreed that the service provided in general by the CWA was good (section 5.23 p.318). As regards service and

quality of water provided in general by the CWA, 75% and 86.7% of the respondents respectively expressed opinions favourable to the supplier.

To summarise, 63.2% of the respondents did not agree to pay more for a better service as against 21.4% who were prepared to do so. Willingness to pay more raises some fundamental issues. It implies that the consumer is not satisfied with the product or service. In the present context, some 20% of the respondents can be considered being unsatisfied with the drinking quality of water and the service provided by the CWA. However, in the case of the other respondents who disagreed to pay more, it may be construed that, according to them, the CWA and in other words the Government, should ensure quality and adequacy of domestic water in Mauritius at its own cost while maintaining the current tariff. Also 65.5% of the respondents were unwilling to pay more for a better drinking quality of water as compared to the 20.9% who were willing to do so. Consumers' willingness/unwillingness to pay more is an element to which should be given due consideration when deciding on the tariff policy of domestic water in Mauritius.

## **5.20 CONSUMPTION OF BOTTLED WATER**

The consumption of bottled water is a world phenomenon which started in developed societies and which has spread elsewhere. Bottled water is an alternative to tap water and other sources of drinking water. It reflects the standard of living of the consumer in the case of Mauritius. A glance at the development of water supply in other countries indicates that bottled water comes on the market only after traditional sources such as lakes, rivers and wells have developed into piped water. This is also the case of Mauritius. This implies that bottled water does not precede but follows the development of piped water supply and that consumers would prefer bottled water only when they can afford it.

Questions 20, 21 and 22 establish consumer behaviour in Mauritius as

regards the consumption of bottled water. The frequency and reasons for consuming and for not consuming bottled water as revealed by the survey are shown in tables 5.46 to 5.48.

**Table 5.46 Frequency of consumption of bottled water**

<b>Q 20 The frequency with which I consume bottled water is as below : (Only One reply required)</b>	<b>No. of Respondents</b>	<b>% n = 220</b>
Very Often	13	5.9
Often	35	15.9
Occasionally	83	37.7
Never	89	40.5
<b>Total</b>	<b>220</b>	<b>100</b>

**Table 5.47 Reasons for consuming bottled water**

<b>Q 21 I consume bottled water : (More than one answer possible)</b>	<b>No. of Respondents</b>	<b>% n = 220</b>
Because of lack of confidence in quality of CWA water	24	10.9
Because people like me consume bottled water (status)	3	1.4
Because I can afford it	42	19.1
Because it is convenient	83	37.7

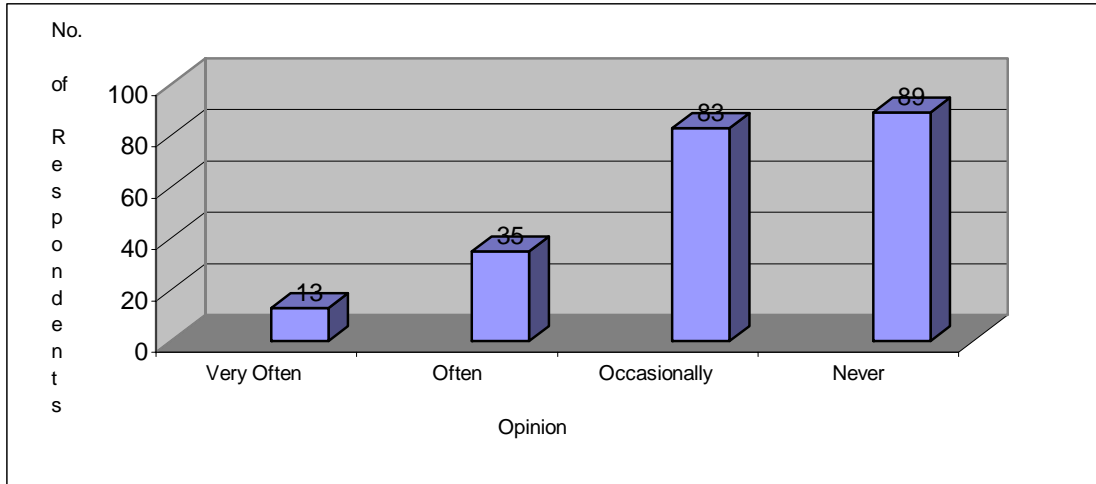
**Table 5.48 Reasons for not consuming bottled water**

<b>Q 22 I do not consume bottled water : (More than one answer possible)</b>	<b>No. of Respondents</b>	<b>% n = 220</b>
Because the quality of CWA water is acceptable to me	69	31.4
Because bottled water is an artificial mark of status	15	6.8
Because people like me cannot afford it	25	11.4
Because it serves no especial purpose	31	14.1

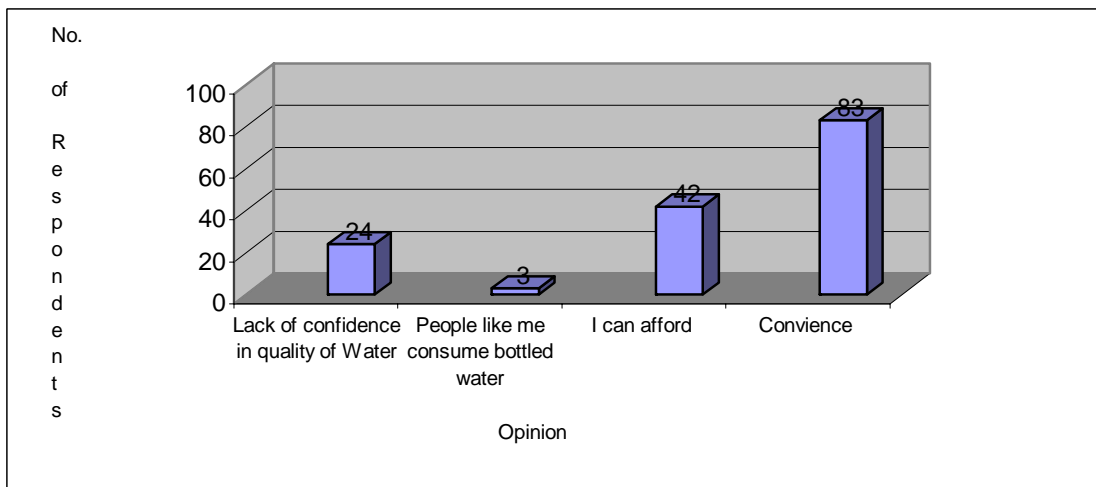
The frequencies and reasons for consuming and for not consuming

bottled water are graphically shown in figures 5.45 to 5.47.

**Fig. 5.45 Frequency of Consuming Bottled water**

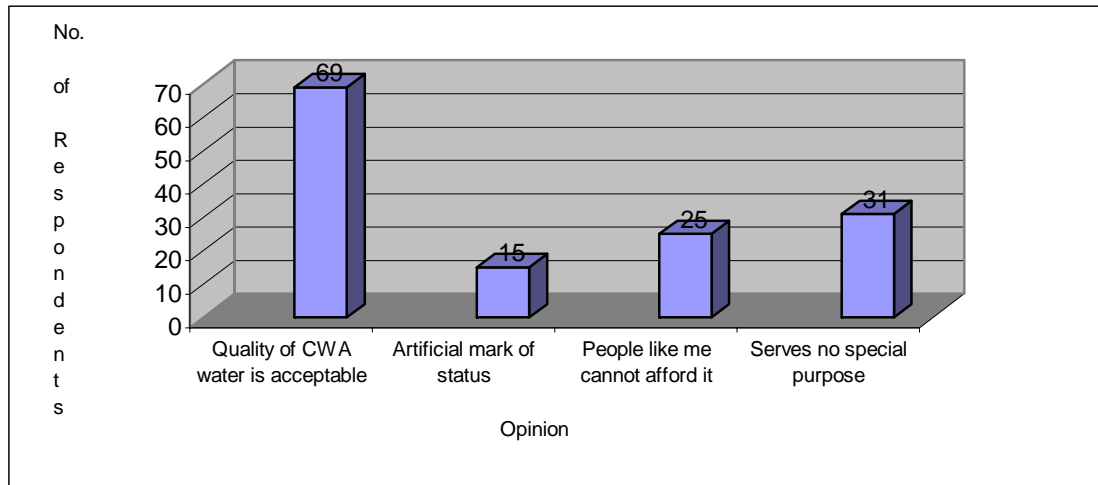


**Fig. 5.46 Reasons for consuming bottled water**





**Fig. 5.47 Reasons for not consuming bottled water**



13(5.9%) out of the 220 respondents consumed bottled water very often, while 35 (15.9%) consumed it often, 83 (37.7%) consumed it occasionally and 59 (40.5%) never consumed it.

Respondents were given the liberty to give more than one reason for consuming or for not consuming bottled water. 24 (10.9%) of respondents consumed bottled water because of lack of confidence in quality of CWA tap water. On the other hand, nearly three times that number did not consume bottled water because of confidence in the quality of CWA tap water. However, replies to question 18 (section 5.18 p.291) reveals that only 19 (8.6%) of respondents did not agree that the quality of CWA water was good. This figure comes quite close to those who consumed bottled water very often.

Only 3 (1.4%) of the respondents declared consuming bottled water because of status. However, 15 (6.8%) who did not consume bottled water declared that bottled water had only an artificial status. These replies at the same time imply that the notion of status is not totally absent from the consumption of bottled water.

Affordability is an important factor which finally allows or deters consumption of bottled water. 42 (19.1%) of respondents consumed bottled water because they could afford it, while 25 (11.4%) could not do so because of financial constraints. It is also noted that the percentage of respondents, (21.8%) who very often and often consumed bottled water comes quite close to those (19.1%) who did so through affordability.

83(37.7%) of the respondents consumed bottled water for convenience. The same number declared consuming it occasionally. For 31(14.1%) of the respondents, bottled water did not serve any special purpose. Convenience would include such situations as when one is travelling, is sick or is on business.

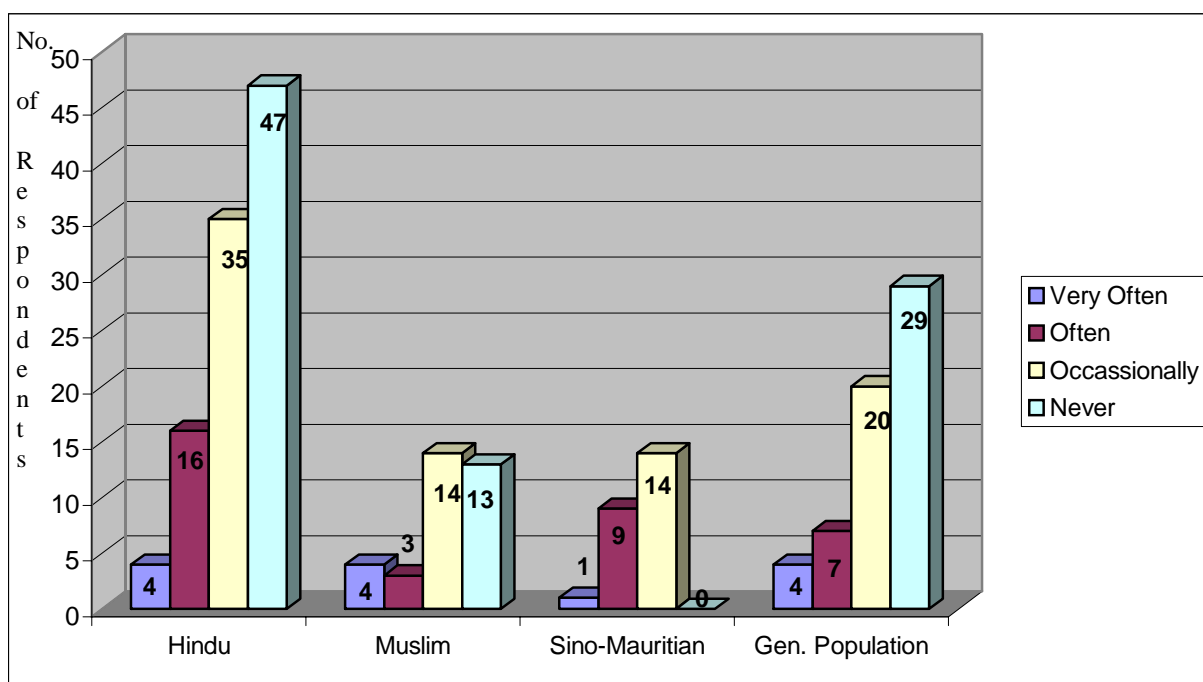
The consumption of bottled water in Mauritius can be said to be marketer dominated as contained in the models that have been reviewed. In that respect, the firm's attributes and message exposure as contained in the Nicosia model influence the consumer. The input stimulus display in the Howard and Sheth model with respect to bottled water in Mauritius also plays a role in that context. As regards the Engel-Blackwell model and the Engel-Blackwell -Miniard model, the consumer is subject to the marketer dominated stimulus contained in them when the marketing of bottled water is considered. In the integrated model, consumption of bottled water can be said to be influenced by the firm's attributes and the social environment. In Mauritius, the market of bottled water stands distinct from the CWA. It appeals to a select segment of consumers; and certainly not to the lower economic class.

The consumption frequency of bottled water is further analysed against ethnic groups, occupational groups and residential regions. This is shown in tables 5.49 to 5.51 and in figures 5.48 to 5.50.

**Table 5.49 Crosstabulation of Consumption Frequency Of Bottled Water and Ethnic Groups**

Consumption Frequency of Bottled water	ETHNIC GROUPS								Total
	Hindu	% n = 102	Muslim	% n = 34	Sino Mtian	% n = 24	Gen. Pop	% n = 60	
Very Often	4	3.9	4	11.8	1	4.2	4	6.7	13
Often	16	15.7	3	8.8	9	37.5	7	11.7	35
Occasionally	35	34.3	14	41.2	14	58.3	20	33.3	83
Never	47	46.1	13	38.2	0	0	29	48.3	89
<b>TOTAL</b>	<b>102</b>	<b>100</b>	<b>34</b>	<b>100</b>	<b>24</b>	<b>100</b>	<b>60</b>	<b>100</b>	<b>220</b>

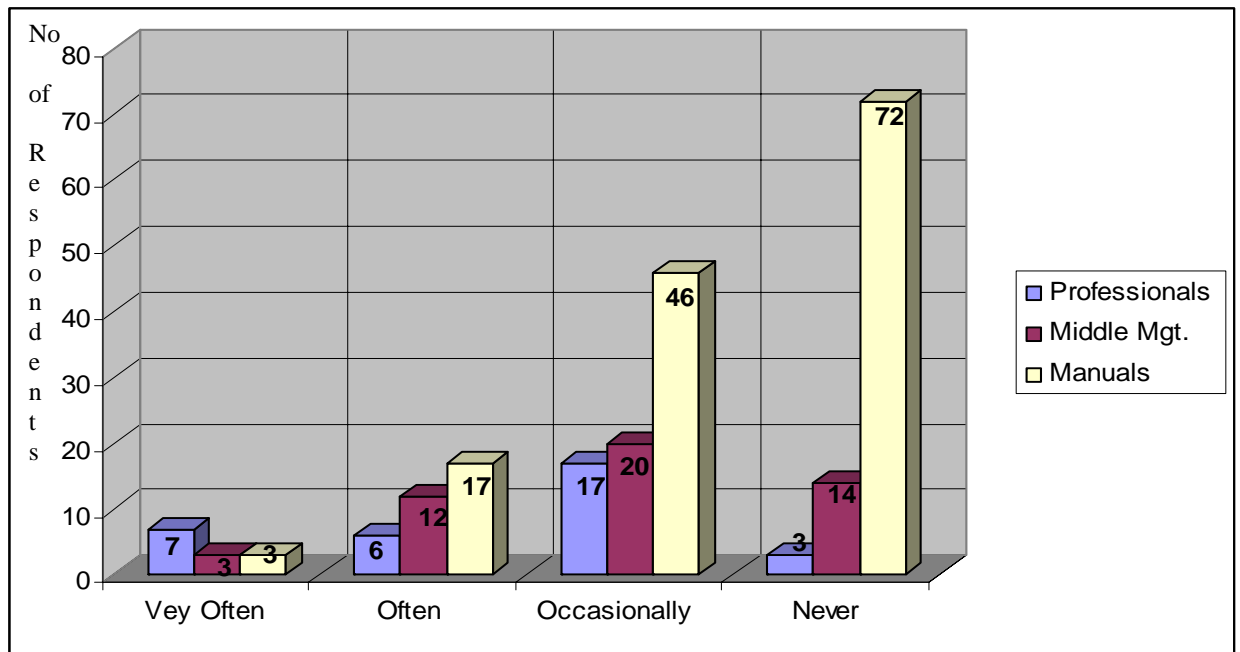
**Fig 5.48 Consumption Frequency of Bottled Water and Ethnic Groups**



**Table 5.50 Crosstabulation of Consumption Frequency of Bottled and Occupational Groups**

Consumption Frequency of bottled water	OCCUPATIONAL GROUPS						Total
	Professionals	% n = 33	Middle Mgt.	% n = 49	Manuels	% n = 138	
Very Often	7	21.2	3	6.1	3	2.2	13
Often	6	18.2	12	24.5	17	12.3	35
Occasionally	17	51.5	20	40.8	46	33.3	83
Never	3	9.1	14	28.6	72	52.2	89
<b>TOTAL</b>	<b>33</b>	<b>100</b>	<b>49</b>	<b>100</b>	<b>138</b>	<b>100</b>	<b>220</b>

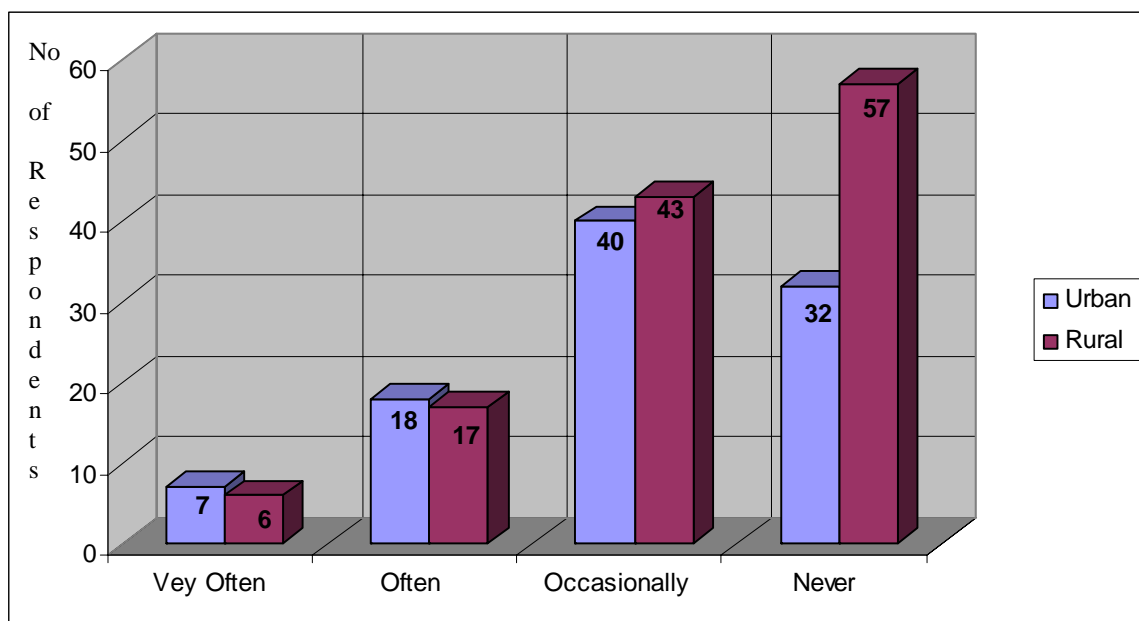
**Fig 5.49 Consumption Frequency of Bottled Water and Occupational Group**



**Table 5.51 Crosstabulation of Consumption Frequency of Bottled Water and Residential Regions**

Consumption Frequency of bottled water	RESIDENTIAL REGIONS				Total
	Urban	% n = 97	Rural	% n = 123	
Very Often	7	7.2	6	4.9	13
Often	18	18.6	17	13.8	35
Occasionally	40	41.2	43	35.0	83
Never	32	33.0	57	46.3	89
<b>TOTAL</b>	<b>97</b>	<b>100</b>	<b>123</b>	<b>100</b>	<b>220</b>

**Fig 5.50 Consumption Frequency of Bottled Water and Residential Regions**



The crosstabulations show that the consumption of bottled water was highest among Sino-Mauritians. The percentage of Sino-Mauritians who very often and often consumed it was 41.7%. The figure for each of the other three ethnic groups was almost the same and varied between 18% and 20%. Almost the same percentage of Hindus and General Population consumed bottled water occasionally, that is 34.3% and 33.3% respectively. The figure for Muslims was 41.2% compared to 58.3% of Sino-Mauritians which was highest among the ethnic groups.

As regards occupational groups, the consumption of bottled water was highest among professionals/managers and least among manual and unskilled workers. 39.4% of professionals/managers and 30.6% of middle management/administrative staff very often and often consumed bottled as compared to 14.5% of manual and unskilled workers. At the same time, 51.5% of professionals/managers, 40.8 of middle management/ administrative staff and 33.3% of manual and unskilled workers consumed bottled water occasionally. On the other hand, the percentage of consumers who never consumed bottled

water was highest among the manual and unskilled workers and least among the professionals/managers. The crosstabulations also indicate that frequency of bottled water consumption was slightly lower in the rural regions than in the urban regions. The observation that can be made is that factors like perception on quality, convenience and consumer behaviour are responsible for the consumption of bottled water in the local context. Affordability remains undeniably the most important factor.

The sale of bottled water represents a lucrative business. It will continue to exist in one form or another in Mauritius and elsewhere. The CWA in Mauritius is an organisation run on a commercial basis. It fulfills all the conditions to be able to invade the market of bottled water in the country. It is the owner of all the water resources. It has the capital, the know-how and logistics to start the business of bottled water as a separate business unit.

## 5.21 COMPLAINING BEHAVIOUR

### 5.21.1 Complaints By Domestic Water Consumers

Questions 23 to 28 relate to the complaining behaviour of the domestic water consumers in Mauritius. In so doing it establishes the level of consumer satisfaction/dissatisfaction. The number and reasons for complaints as established by the survey were as shown in tables 5.52 and 5.53 and figures 5.51 and 5.52.

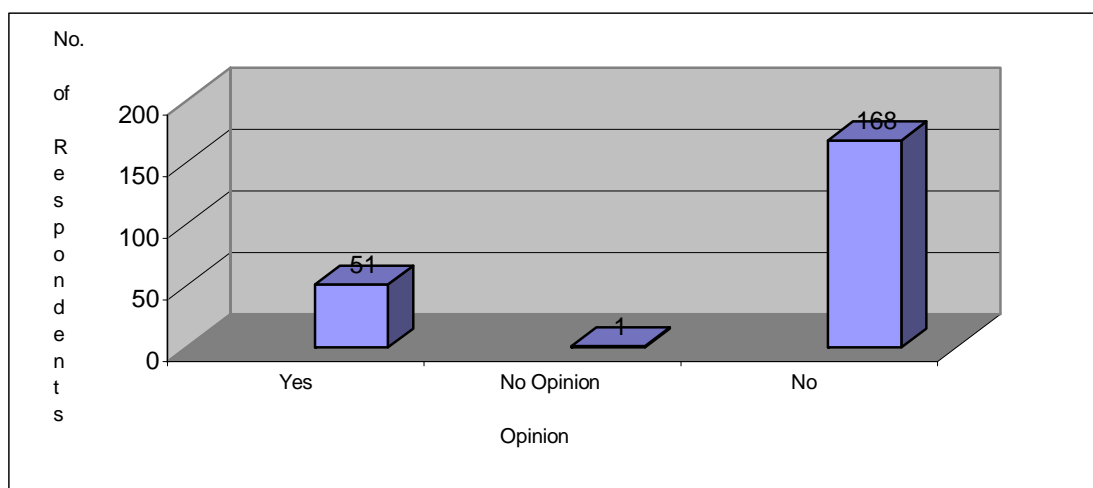
**Table 5.52 Complaints**

<b>Q 23 I have complained to the CWA in the past</b>	<b>No. of Respondents</b>	<b>% n = 220</b>
Yes	51	23.2
No Opinion	1	0.4
No	168	76.4
<b>Total</b>	<b>220</b>	<b>100</b>

**Table 5.53 Reasons for complaining**

<b>Q 24 I complained to the CWA (More than one answer possible)</b>	<b>No. of Respondents</b>	<b>% n = 220</b>
Because my bill was excessive	16	7.3
Because the water supply was insufficient	20	9.1
Because the pipe at my place was broken	4	1.8
Because of a broken pipe on the road	10	4.5
Because I felt my meter was defective	14	6.3
Because I was not satisfied with the employees of the CWA	7	3.2

**Fig. 5.51 I have complained to the CWA in the Past**



**Fig. 5.52 Reasons for complaining to the CWA**

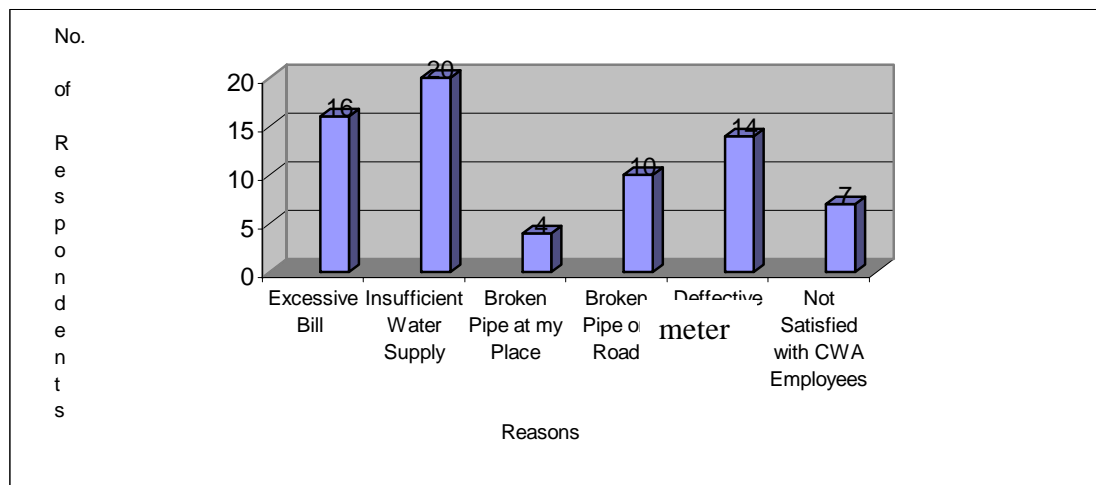


Figure 5.52 shows that the 51 (23.2%) of the 220 respondents had complained to the CWA. The modal category of complaints was about insufficiency of water supply followed by excessive bills complaints. The lowest number of complaints recorded was for broken pipes. The figures speak a lot. Nearly a quarter of the CWA customers had been dissatisfied for one or more reasons.

A closer look reveals that five out of six reasons given for complaining directly affect the respondent either physically, financially or emotionally. In case of the second and third reasons, that is, insufficient water supply and broken pipe at the consumer's place, contained in table 5.53 p.307, the water flow to the consumer gets affected and reduced resulting in hardships. The third, and fifth reasons, that is, broken pipe at consumer's place and defective meter lead to increased water bills. The sixth reason, which is dissatisfaction with CWA employees, touches the consumer emotionally. The consumer's complaint not having been attended to satisfactorily affects the latter emotionally. The fourth reason, that is broken pipe and water there from flowing on the road, is the only reason which indirectly affects the public. The survey revealed that only 4.5% of the respondents had reported to the CWA a broken pipe and water leakage on the road. In fact, not every onlooker reports to the CWA a broken pipe on the road.



In Mauritius, the consumer has the option of making his complaint to the CWA by calling in person at one of its seven regional offices spread across the country and at its Head Office. Complaints can also be made by phone to any of these offices. It is interesting to note that any telephone call made to the seven regional offices outside office hours automatically gets diverted to the Head Office where there are always officers to reply. The Hot Line Service of the CWA with an abbreviated telephone number, namely 170, is operational round the clock and round the year to take any type of call including any complaint and to give feedback. The different venues for accessing the CWA are to the advantage of both the consumers and the CWA. The consumers are able to make their complaints easily. The CWA is able to be aware of these complaints in time and to attend them.

It is important to situate the responsibility of the complaints. The consumer is personally responsible directly or indirectly for three of the six reasons for complaints. An excessive bill (7.3%) is due to consumption and/or leakage at the consumer's premises for which he is responsible. As regards a broken supply pipe (1.8%), mentioned in table 5.53 p.306, a consumer is required as per the law to keep same in order at all times. Also a broken supply pipe results in an excessive bill for which the consumer becomes responsible. The supply pipe is that part of the installation which starts from the meter and is the private property of the consumer as per the law. Even in cases where the consumer felt that the water meter was defective (4.5%), he cannot be fully absolved of his responsibility. The consumer starts to question the accuracy of the water meter only when he is faced with an excessive bill, the reason for which, could also include uncontrolled consumption, leakage, wastage and defective installations. As per the law governing the CWA, the consumer has the right to apply for a meter test should he feel that the meter is not registering the volume of water accurately. In the event of the meter being tested and being found to be working properly, the consumer becomes accountable for the bill issued to him. It is felt that where the consumer is directly responsible for the

complaints, consumer awareness campaigns would go a long way towards reducing them, in increasing consumer satisfaction, in reducing the load of the CWA in complaints handling and in saving from wastage a precious and vital commodity which is water.

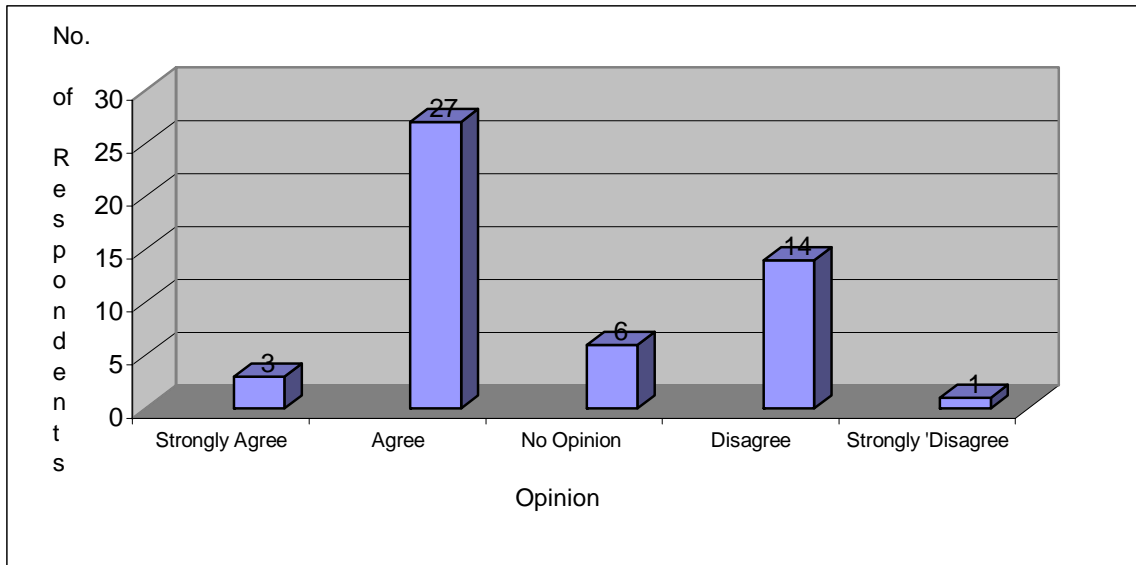
### 5.21.2 Efficiency In Complaints Handling

Complaints handling reflects the efficiency of an organisation. The opinions expressed by complainants in reply to question 25 were as shown in table 5.54 and in figure 5.53.

**Table 5.54 Complaints handling**

<b>Q 25 ON THE WHOLE MY COMPLAINT WAS DEALT WITH EFFICIENTLY</b>	<b>No. of Respondents</b>	<b>% n = 51</b>	<b>Cumulative %</b>
Strongly agree	3	5.9	5.9
Agree	27	53.0	58.9
No opinion	6	11.7	70.6
Disagree	14	27.4	98.0
Strongly disagree	1	2.0	100
<b>T O T A L</b>	<b>51</b>	<b>100</b>	<b>100</b>

**Fig. 5.53 My complaint was dealt with Efficiently**



A total of 5.1% of the respondents had complained to the CWA. Of the complainants who expressed their opinion, 58.9% stated that their complaints had been dealt with efficiently while 29.4% disagreed. Efficiency in complaints handling is also related to the time taken to finalise consumers' complaints. This aspect is dealt with and commented upon in the next section 5.21.3.

### 5.21.3 Time Taken For Complaints Handling.

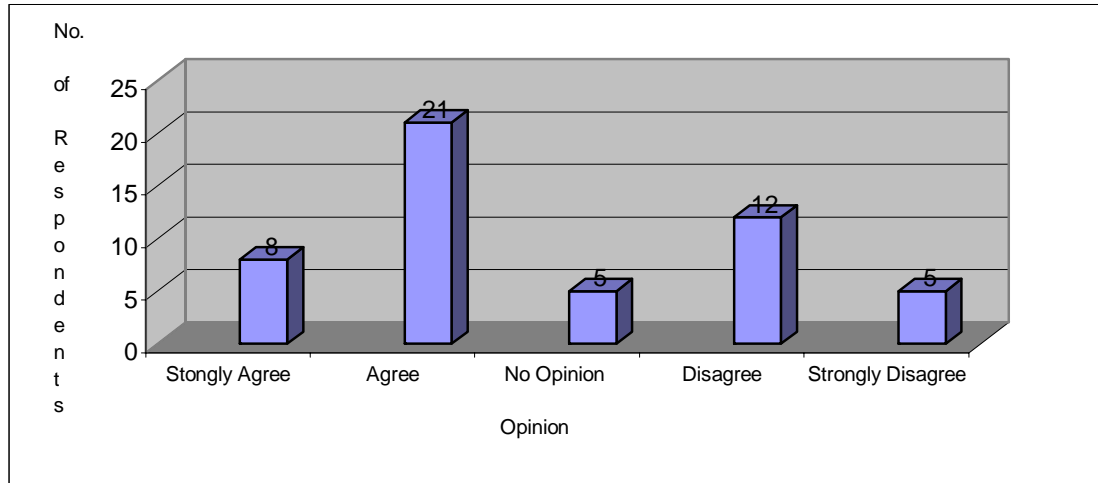
The complainants' opinions on the time taken to finalise their complaints were established by question 26 and were as in table 5.55.

**Table 5.55 Time taken for complaints handling**

Q 26 The time taken to finalise my complaint was acceptable	No. of Respondents	% n = 51	Cumulative %
Strongly agree	8	15.7	15.7
Agree	21	41.1	66.7
No opinion	5	9.8	66.7
Disagree	12	23.5	90.2
Strongly disagree	5	9.8	100
<b>TOTAL</b>	<b>51</b>	<b>100</b>	<b>100</b>

Figure 5.54 depicts the information in table 5.55.

**Fig. 5.54 Time taken to finalise my complaint was acceptable**



56.9% of the total number of the complainants agreed that their complaints had been finalised within an acceptable time limit as opposed to 33.3% who disagreed therewith; while 9.8% expressed no opinion. In other words, one third of the complainants were not satisfied with the time taken to finalise their complaints.

#### 5.21.4 Complaints Handling

Consumer dissatisfaction leads to consumer complaints. Kasouf *et al* (1995) have argued that consumer complaints are very useful forms of consumer initiated information that can assist in making strategic and tactical decisions (section 2.23 p. 106). Kasouf *et al* (1995) report from Fornell and Wernerfelt (1987) that the surest way to a customer focused culture is through increased complaints. The same authors suggest that complaining reduces dissonance caused by dissatisfaction. According to Kowalski (1996), low propensity complainers felt better after they had expressed their dissatisfaction. All these views are equally relevant and applicable to complainants who are not satisfied with the services provided by the CWA.

33% of the complainants declared that their complaints had not been attended to efficiently. Moreover, an almost equal percentage declared that the time taken to finalise their complaints was not acceptable. Both findings have serious implications for the post-consumption behaviour of domestic water consumers. Consumer dissatisfaction is seen in the experience undergone by the consumer and in feedback in the Nicosia model. In the Howard and Sheth model, the outcome of the purchase and consumption is seen in satisfaction/dissatisfaction. In both the Engel-Blackwell and in the Engel-Blackwell-Miniard models, dissatisfaction is characterised as dissonance in the post-consumption stage. In the integrated model, dissatisfaction is shown as an outcome of consumption. When considering these models, the findings of the survey imply that the complainants were likely to develop adverse attitudes and beliefs towards the CWA. The supplier is in a monopoly situation and the complainants had no alternative source of supply. This finding deserves close consideration by the CWA.

It is obvious that actions leading to a reduction of consumer complaints and to improvement in complaints handling should emanate from the CWA. Education of both the consumer and of the employee would certainly benefit all concerned. Improved consumer behaviour, judicious use of water and proper maintenance of the piping system by the consumer would avoid excessive bills and thus avoid unnecessary expenditure. These would also avoid the wastage of a vital natural resource. On the other hand, the proper and continuous training of employees in all aspects of customer care would result in efficient handling of complaints.

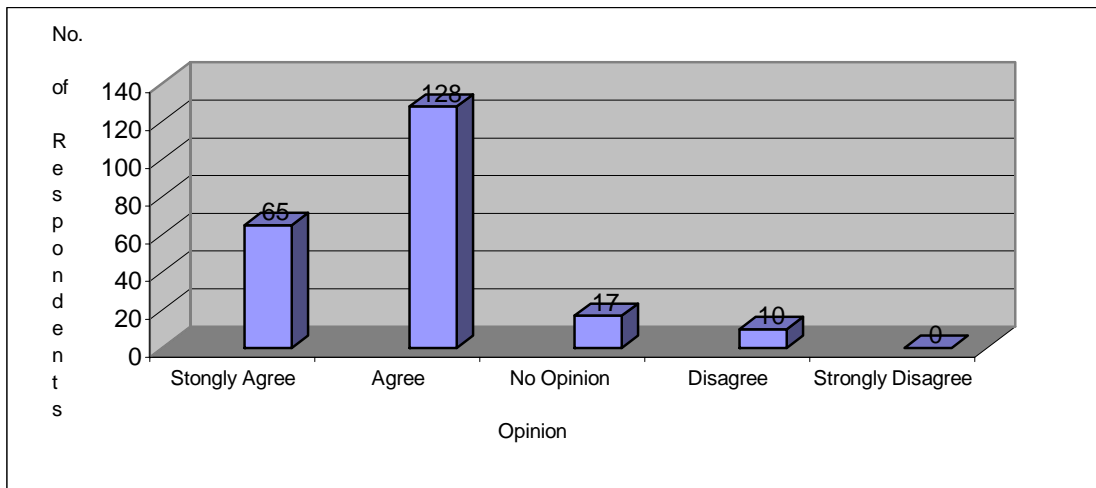
## **5.22 CONSUMER PERCEPTION OF CWA EMPLOYEES**

Feedback on how employees are perceived by the customers is important for any organization. Question 27 establishes this aspect. The replies of the respondents were as shown in tables 5.56 to 5.59 and the figures 5.55 to 5.57.

**Table 5.56 Courteousness of CWA employees**

<b>Q 27.1 CWA Employees are courteous</b>	<b>No. of respondents</b>	<b>% n = 220</b>	<b>Cumulative %</b>
Strongly agree	65	29.6	29.6
Agree	128	58.2	87.8
No opinion	17	7.7	95.5
Disagree	10	4.5	100
Strongly disagree	0	0	100
<b>Total</b>	<b>220</b>	<b>100</b>	<b>100</b>

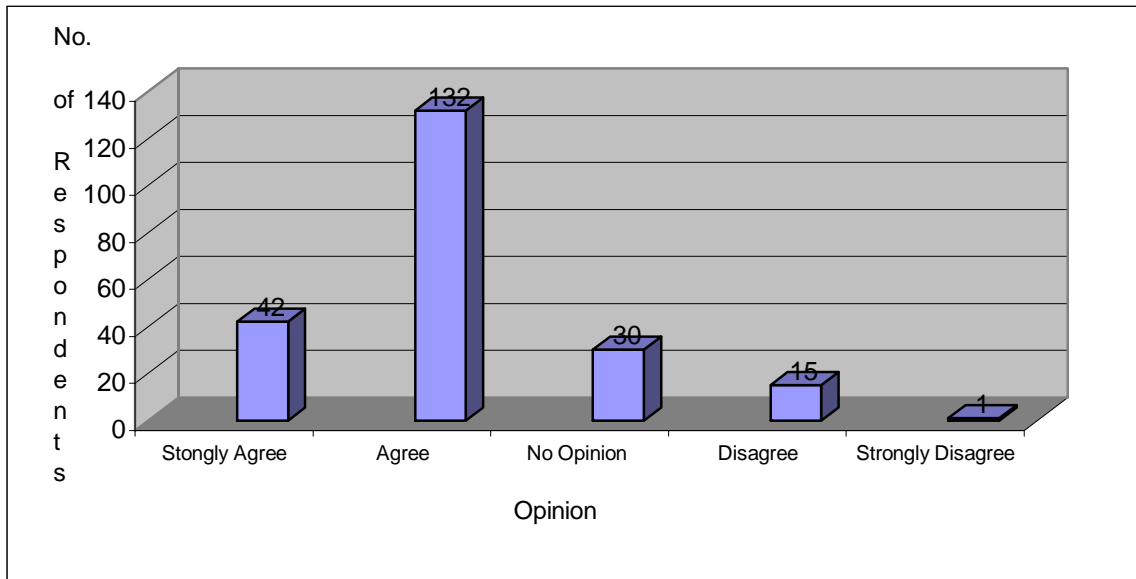
**Fig . 5.55 CWA Employees are Courteous**



**Table 5.57 Helpfulness of CWA employees**

<b>Q 27.2 CWA Employees are helpful</b>	<b>No. of respondents</b>	<b>% n = 220</b>	<b>Cumulative %</b>
Strongly agree	42	19.1	19.1
Agree	132	60.0	79.1
No opinion	30	13.6	92.7
Disagree	15	6.8	99.5
Strongly disagree	1	0.5	100
<b>Total</b>	<b>220</b>	<b>100</b>	<b>100</b>

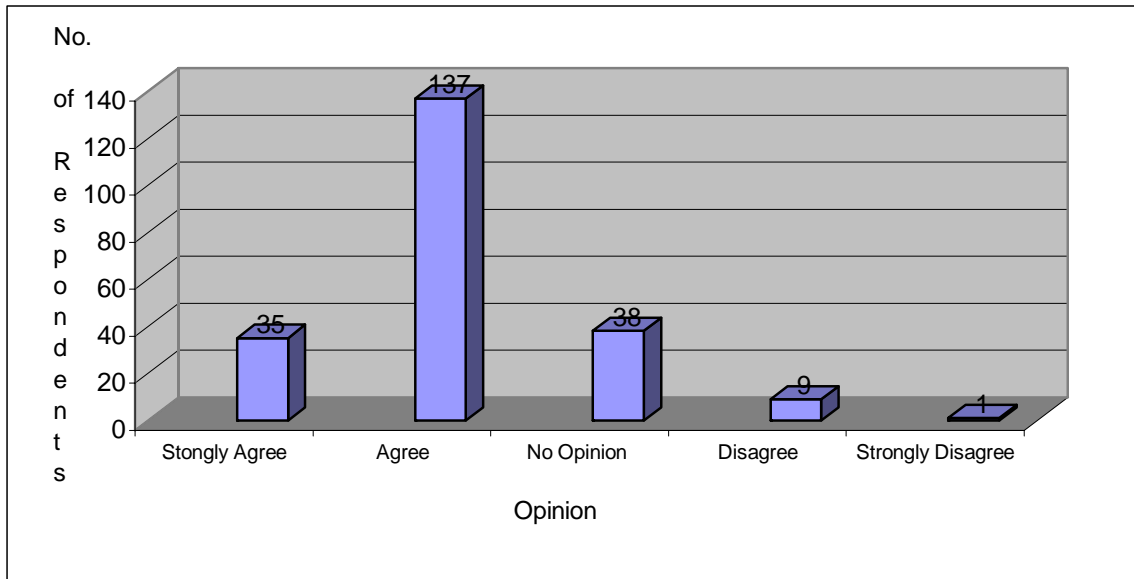
**Fig. 5.56 CWA Employees are helpful**



**Table 5.58 Knowledgeability of CWA employees**

Q 27.3 CWA Employees are knowledgeable	No. of respondents	% n = 220	Cumulative %
Strongly agree	35	15.9	15.9
Agree	137	62.2	78.1
No opinion	38	17.3	95.4
Disagree	9	4.1	99.5
Strongly disagree	1	0.5	100
<b>Total</b>	<b>220</b>	<b>100</b>	<b>100</b>

**Fig. 5.57 CWA Employees are knowledgeable**



It is noted from the above information that a total of 87.8% of the respondents strongly agreed and agreed on the courteousness, 79.1 % on the helpfulness and 78.1% on the knowledgeability of CWA employees. The percentage of the respondents who expressed a negative opinion on the courteousness, helpfulness and knowledgeability of CWA employees was 4.5%, 7.3% and 4.5% respectively. It is also noted from replies to Question 24 that 23.2% of the respondents had complained against CWA employees (section 5.21.1 p. 306).

The results are highly indicative of the general performance of CWA employees. It shows the extent to which the firm's attributes mentioned in the Nicosia model, and in the present context represented by the CWA, are successful. On the whole, the findings mentioned are fairly favourable to the CWA. They indicate that the significative and symbolic stimuli contained in the Howard and Sheth model are displayed fairly well by the CWA. They also show that the firm's dominated stimuli mentioned in the Engel-Blackwell model and in the Engel - Blackwell-Miniard model and in the firm's attributes in the integrated model are being input fairly well.



However, the negative opinions expressed by the respondents on CWA employees have serious implications for both the CWA and for the consumers. The CWA should continuously improve customer satisfaction and aim at total quality in the provision of its service. This can only be done by improving the qualities of its employees. The success of an organisation depends much on the quality of service provided. According to Edward Deming, profit and growth come from customers that can boast about the product or service (Scherkenbach William, 1991). At the same time, success of the service experience does not depend only on the timeliness and effectiveness of the service but also on customer-employee interaction. Eiglier and Langeard (1996) (section 2.22.3 p. 105) emphasize that contact processes are important into ensuring high quality service and safeguarding the interest of the customer and of the organisation in conflicting situations. Service according to them rests heavily on the contact personnel. These views speak in favour of the importance that has to be given by the CWA to improving the qualities of its employees. The satisfaction of the Mauritian domestic water consumer does not depend only on the CWA front desk employees. Such satisfaction is the result of a whole set of inter-related action by front line employees and those in the back offices and on sites. In that context, the views of Gronroos (1981) is still worthy of note. In line with the views of Gronroos (1981), CWA employees need to be committed to the fact that everyone in the organisation has a customer whom he must serve and satisfy. Not all respondents were satisfied with the courteousness, helpfulness and knowledgeability of CWA employees according to the survey (tables 5.56 to 5.58 pp. 314-315). At the same time, even if part of the respondents were satisfied with CWA employees, there is still need for the CWA to improve the qualities of its employees. This question is based on the understanding that improvement is a continuous process. This view embraces the Kaizen approach which adopts a system of continual improvement (section 2.22 p. 100). The CWA should thus improve the quality of its employees through training, motivation and incentives and thereby improve the quality of service to customers and customer satisfaction. The CWA would thereby persevere towards total quality in its

management.

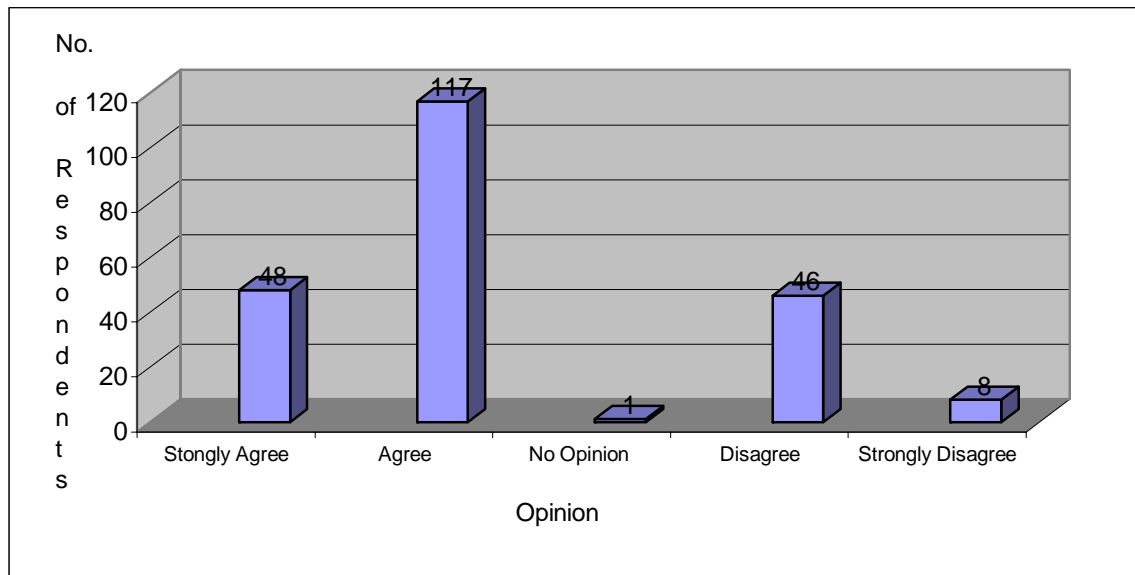
### 5.23 CONSUMERS' GENERAL OPINION

The respondents were required to express their opinion on the volume of water and on the service provided by the CWA in general. Question 28.1 and 28.2 of the survey bring about the replies which are contained in tables 5.59 and 5.60 and in figures 5.58 and 5.59.

**Table 5.59 Opinion on volume of water provided by CWA**

<b>Q 28.1 As regards CWA in general the Vol. of water provided is sufficient</b>	<b>No. of respondents</b>	<b>% n = 220</b>	<b>Cumulative %</b>
Strongly agree	48	21.8	21.8
Agree	117	53.2	75.0
No opinion	1	0.5	75.5
Disagree	46	20.9	96.4
Strongly disagree	8	3.6	100
<b>Total</b>	<b>220</b>	<b>100</b>	<b>100</b>

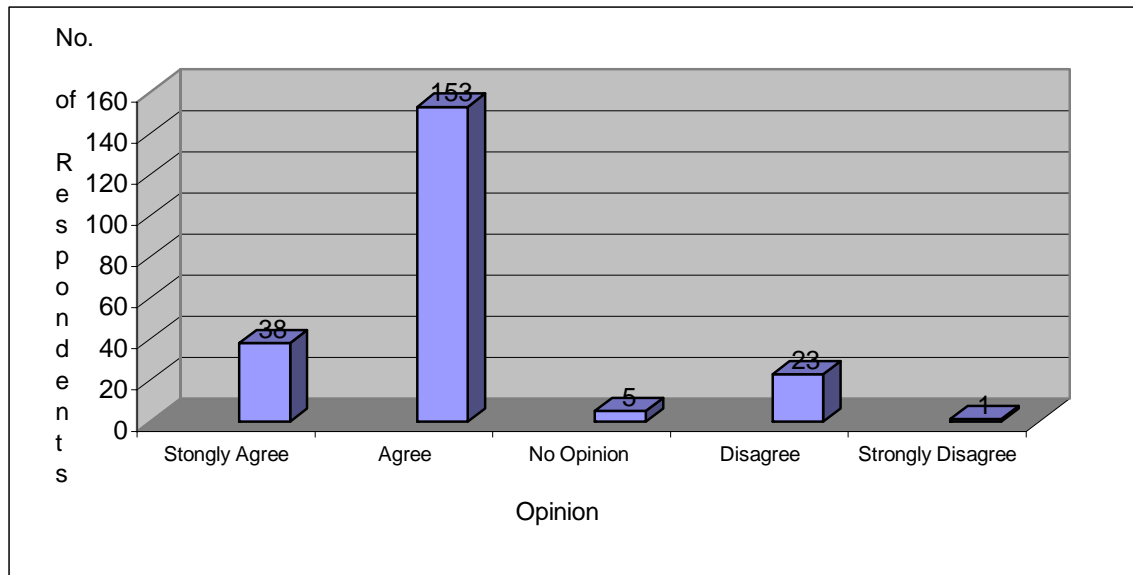
**Fig. 5.58 Volume of water provided in general by the CWA is sufficient**



**Table 5.60 Opinion on service provided by CWA**

<b>Q 28.2 As regards CWA in general the services provided is good</b>	<b>No. of respondents</b>	<b>% n = 220</b>	<b>Cumulative %</b>
Strongly agree	38	17.2	17.2
Agree	153	69.5	86.7
No opinion	5	2.3	89.0
Disagree	23	10.5	99.5
Strongly disagree	1	0.5	100.0
<b>Total</b>	<b>220</b>	<b>100</b>	<b>100</b>

**Fig. 5.59 Service provided in general by CWA is Good**



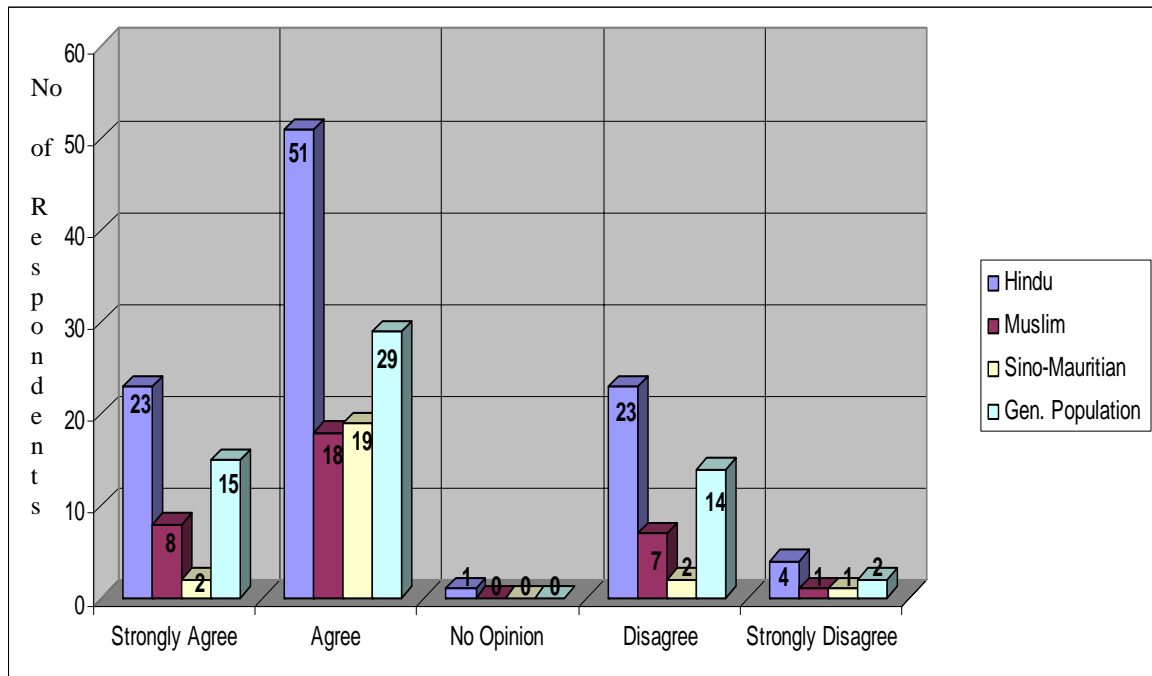
165(75%) and 191(86.7%) of the respondents respectively agreed that the volume of water provided was sufficient and that the service was good . On the other hand, 54 (24.5%) of the respondents found the volume of water supplied as insufficient. It is noted that the same percentage of respondents had, when replying to question 15 (section 5.15 p.277), declared that their water related needs were not well satisfied with the volume of water provided to them. Moreover, 24(11%) of the respondents did not agree that the service provided by the CWA was good.

The perception of domestic consumers on the volume of water provided by the CWA being sufficient is further crosstabulated in tables 4.61 to 4.63 against ethnic groups, occupational groups and residential regions and graphically shown in figures 5.60 to 5.62.

**Table 5.61 Crosstabulation of Volume of Water Supplied Being Sufficient and Ethnic Groups**

Volume of water Supplied is Sufficient	ETHNIC GROUPS								Total
	Hindu	% n = 102	Muslim	% n = 34	Sino Mtian	% n = 24	Gen. Pop	% n = 60	
Strongly Agree	23	22.6	8	23.5	2	8.3	15	25.0	48
Agree	51	50.0	18	53.0	19	79.2	29	48.4	117
No Opinion	1	0.9	0	0	0	0	0	0	1
Disagree	23	22.6	7	20.6	2	8.3	14	23.3	46
Strongly Disagree	4	3.9	1	2.9	1	4.2	2	3.3	8
<b>TOTAL</b>	<b>102</b>	<b>100</b>	<b>34</b>	<b>100</b>	<b>24</b>	<b>100</b>	<b>60</b>	<b>100</b>	<b>220</b>

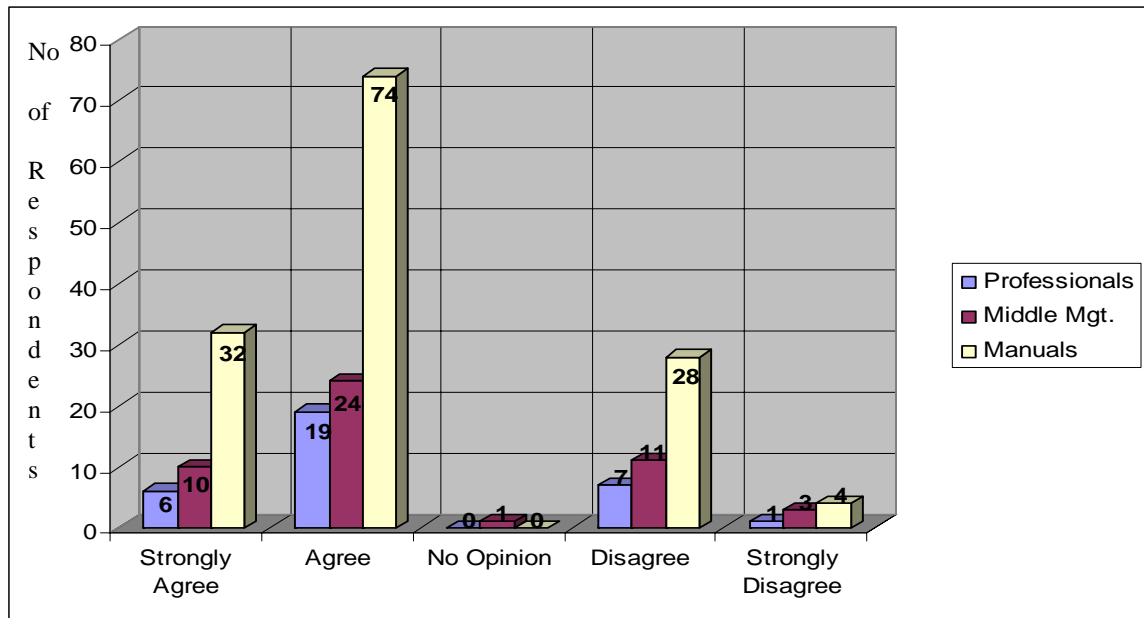
**Fig 5.60 Water Supplied Being Sufficient and Ethnic Groups**



**Table 5.62 Crosstabulation of Volume of Water Supplied Being Sufficient and Occupational Groups**

Volume of water Supplied is sufficient	OCCUPATIONAL GROUPS						Total
	Professionals	% n = 33	Middle Mgt.	% n = 49	Manuels	% n = 138	
Strongly Agree	6	18.2	10	20.4	32	23.2	48
Agree	19	57.6	24	49.0	74	53.7	117
No Opinion	0	0	1	2.0	0	0	1
Disagree	7	21.2	11	22.5	28	20.2	46
Strongly Disagree	1	3.0	3	6.1	4	2.9	8
<b>TOTAL</b>	<b>33</b>	<b>100</b>	<b>49</b>	<b>100</b>	<b>138</b>	<b>100</b>	<b>220</b>

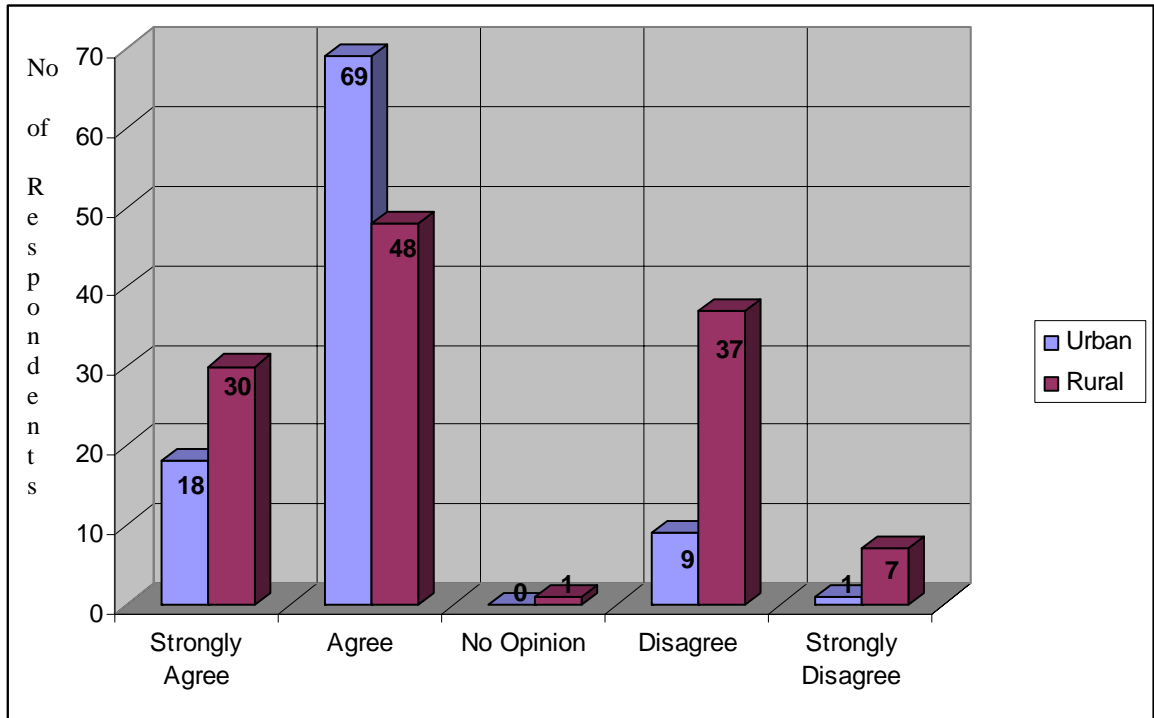
**Fig 5.61 Water Supplied Being Sufficient and Occupational Group**



**Table 5.63 Crosstabulation of Volume of Water Supplied Being Sufficient and Residential Regions**

Volume of water Supplied is sufficient	RESIDENTIAL REGIONS				Total
	Urban	% n = 97	Rural	% n = 123	
Strongly Agree	18	18.6	30	24.4	48
Agree	69	71.1	48	39.0	117
No Opinion	0	0	1	0.8	1
Disagree	9	9.3	37	30.1	46
Strongly Disagree	1	1.0	7	5.7	8
<b>TOTAL</b>	<b>97</b>	<b>100</b>	<b>123</b>	<b>100</b>	<b>220</b>

**Fig 5.62 Water Supplied Being Sufficient and Residential Regions**



The crosstabulations (tables 5.61 to 5.63) show that the greater majority, that is, 72% and above, of the ethnic groups strongly agreed and agreed that the volume of water generally supplied by the CWA in the country was sufficient. The highest figure is 87.5% and refers to Sino-Mauritians. The percentage of Hindus, Muslims and General Population who expressed a different view was between 23% and 26% as compared to 12.5% of Sino-Mauritians. About 70% to 75% of all occupational groups strongly agreed and agreed that the volume of water supplied in the country was sufficient. While the views expressed by the ethnic groups and by the occupational groups were quite similar; those of consumers in urban and in rural regions showed some difference. About 89.7% of urban residents found the volume of water generally supplied as sufficient as compared to 63.4% of rural consumers. This aspect can be explained by the fact that the water supply in urban areas is relatively better than that in rural regions.

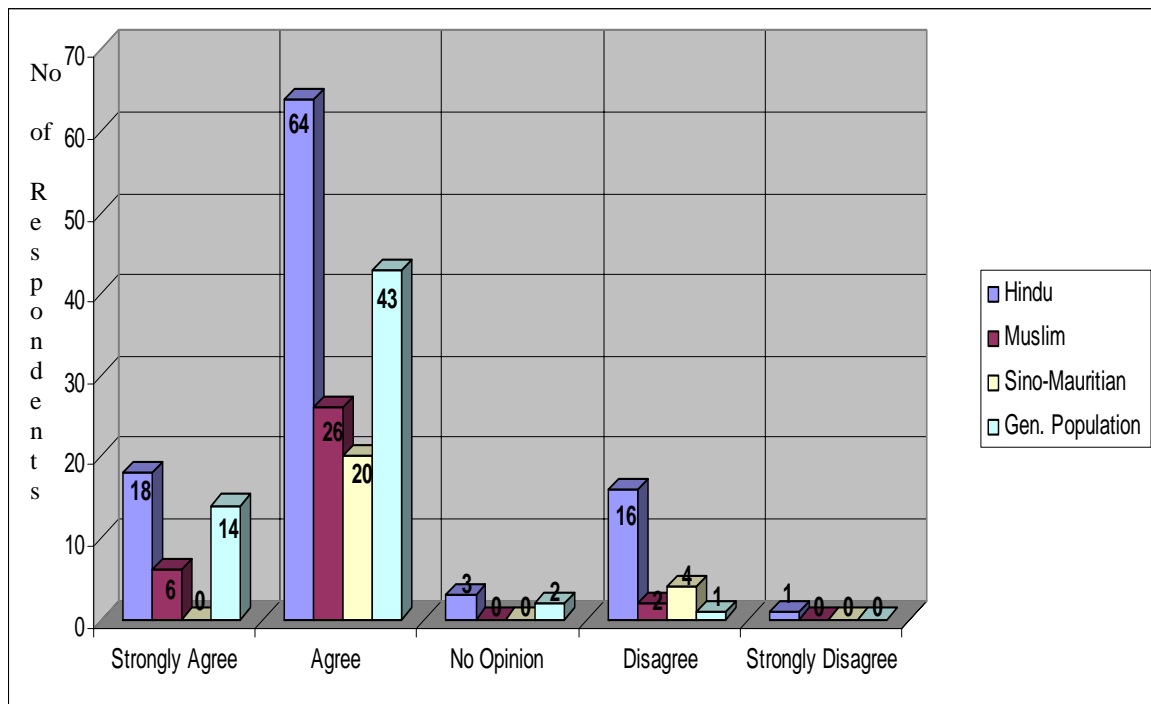
Opinion of consumers on the service provided by the CWA in general is

contrasted against the three main variables, namely, ethnic groups, occupational groups and residential regions and is shown in the crosstabulations in tables 5.64 to 5.66 and in figures 5.63 to 5.65.

**Table 5.64 Crosstabulation of Service Provided Being Good and Ethnic Groups**

Service provided is good	ETHNIC GROUPS								Total
	Hindu	% n = 102	Muslim	% n = 34	Sino Mtian	% n = 24	Gen. Pop	% n = 60	
Strongly Agree	18	17.6	6	17.6	0	0	14	23.3	38
Agree	64	62.7	26	76.5	20	83.3	43	71.7	153
No Opinion	3	2.9	0	0	0	0	2	3.3	5
Disagree	16	15.9	2	5.9	4	16.7	1	1.7	23
Strongly Disagree	1	0.9	0	0	0	0	0	0	1
<b>TOTAL</b>	<b>102</b>	<b>100</b>	<b>34</b>	<b>100</b>	<b>24</b>	<b>100</b>	<b>60</b>	<b>100</b>	<b>220</b>

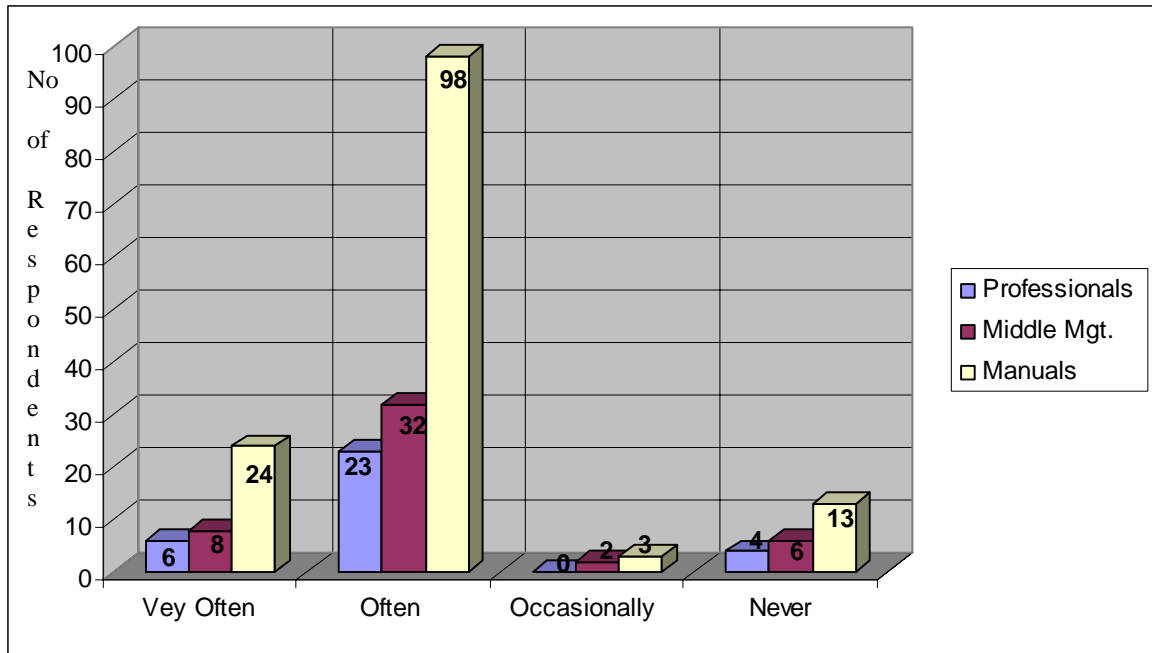
**Fig 5.63 Service provided being Good and Ethnic Groups**



**Table 5.65 Crosstabulation of Service Provided Being Good and Occupational Groups**

Service provided is good	OCCUPATIONAL GROUPS						Total
	Professionals	% n = 33	Middle Mgt.	% n = 49	Manuals	% n = 138	
Strongly Agree	6	18.2	8	16.4	24	17.4	38
Agree	23	69.7	32	65.3	98	71.0	153
No Opinion	0	0	2	4.1	3	2.2	5
Disagree	4	12.1	6	12.2	13	9.4	23
Strongly Disagree	0	0	1	2.0	0	0	1
<b>TOTAL</b>	<b>33</b>	<b>100</b>	<b>49</b>	<b>100</b>	<b>138</b>	<b>100</b>	<b>220</b>

**Fig 5.64 Service provided being Good and Occupational Group**

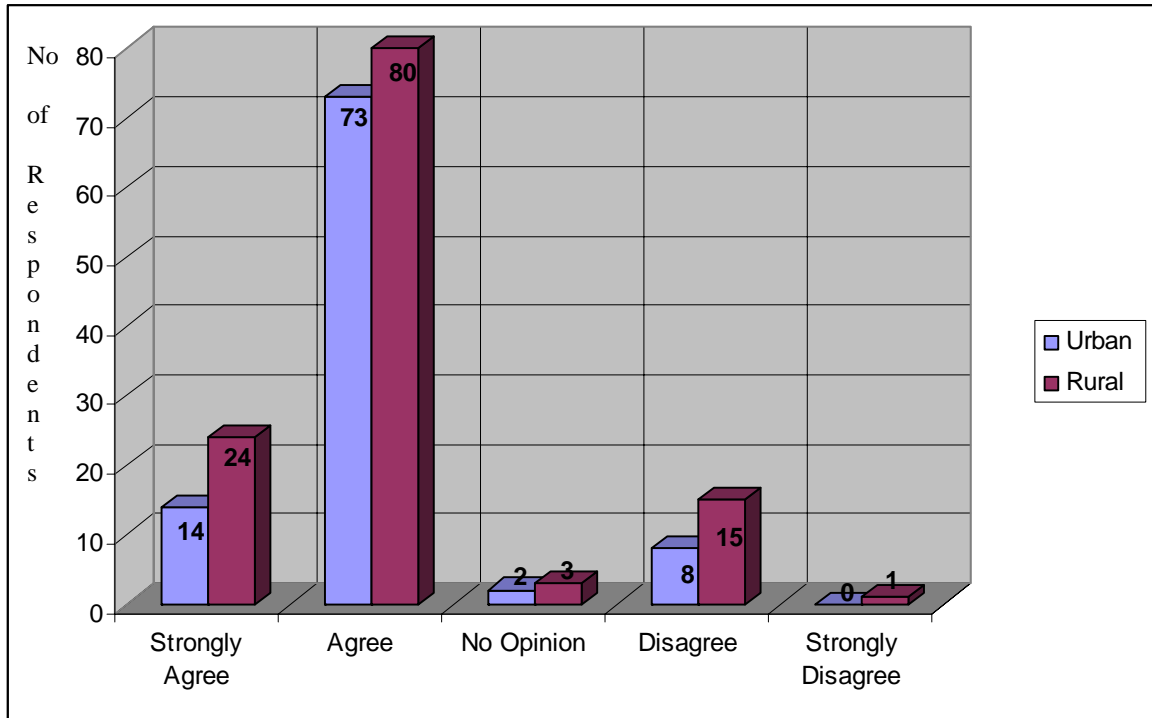


**Table 5.66 Crosstabulation of Service Provided Being Good and Residential Regions**

Service provided is good	RESIDENTIAL REGIONS				Total
	Urban	% n = 97	Rural	% n = 123	
Strongly Agree	14	14.4	24	19.5	38
Agree	73	75.3	80	65.1	153
No Opinion	2	2.0	3	2.4	5
Disagree	8	8.3	15	12.2	23
Strongly Disagree	0	0	1	0.8	1
<b>TOTAL</b>	<b>97</b>	<b>100</b>	<b>123</b>	<b>100</b>	<b>220</b>



**Fig 5.65 Service Provided Being Good and Residential Areas**



The crosstabulations show that the percentage of each ethnic group which strongly agreed and agreed that the service provided in general by the CWA in the country was between 80% and 95%. The figure among the occupational groups was between 82% and 88%. At the same time 89.7% of urban and 84.6% of rural consumers qualified the service provided by the CWA as being good. These results stand in favour of the CWA. However, satisfaction is lower among rural residents as compared to those in urban areas. This aspect requires close attention by the supplier.

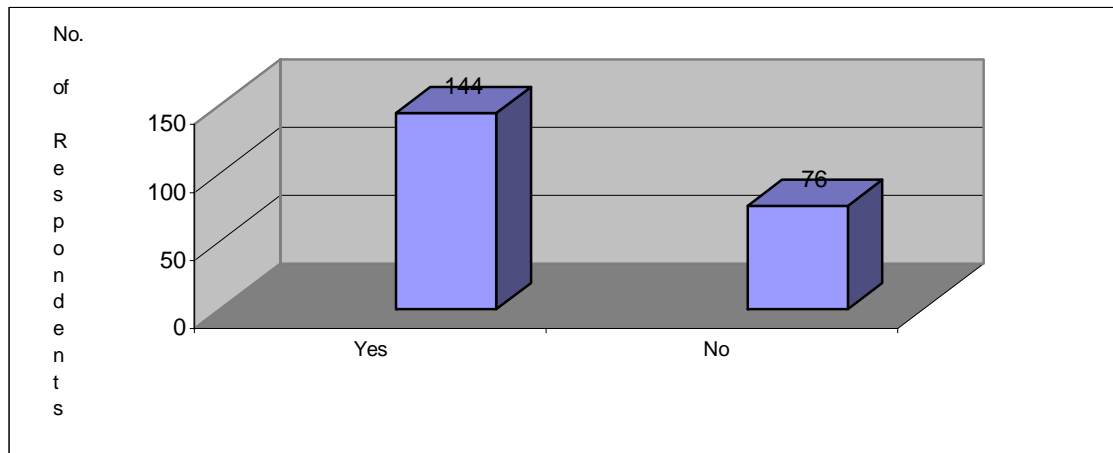
The general opinion expressed in tables 5.59 and 5.60 shows that 25% and 15% of the respondents were respectively dissatisfied with the volume of water supplied and the related service provided by the CWA in Mauritius. When viewed within the hysteresis model of Hill (1981) (section 2.21.3 p. 98), the water supply and service provided by the CWA can be classified as dissatisfiers. At the same time, the view of Hallowell (1996) as reported by Cronin *et al* (2001:1993) (section 2.20 p. 94) is worthy of note. According to this view, customer

satisfaction is the result of a customer's perception of the value received where value represents service quality relative to price. In this context, it is evident that the water supply and service provided by the CWA do not in all cases meet the perceived value of the domestic water consumers in Mauritius. In this respect, improvement of water supply and service by the CWA can be classified as a priority area for two reasons. First, water is a vital commodity of daily use. Second, the CWA is in a monopoly situation in Mauritius and the sole supplier of water.

## 5.24 DOMESTIC WATER STORAGE

Question 29 is related to storage of domestic water by consumers in Mauritius. The replies of the respondents are reproduced in figures 5.66 and 5.67 and in table 5.67.

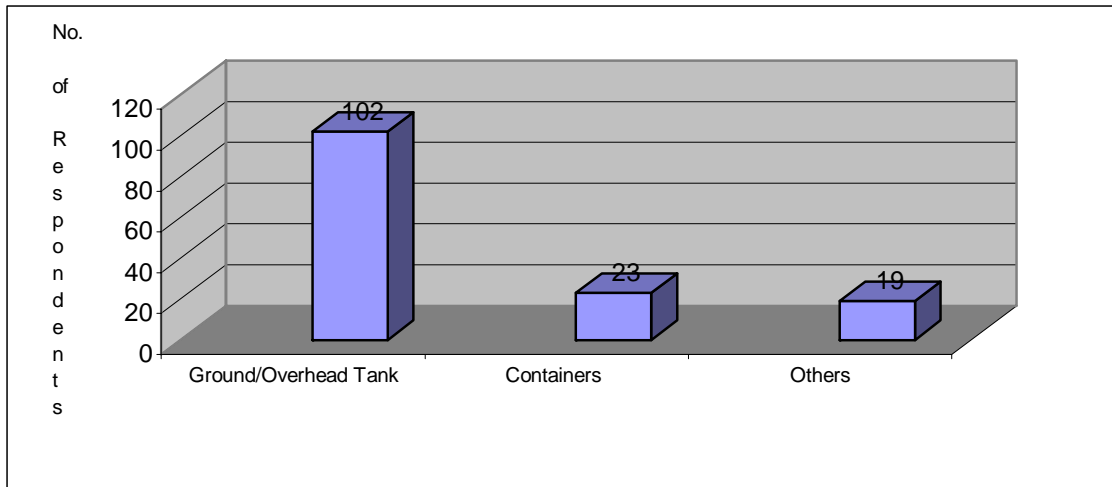
**Fig. 5.66 Domestic Water Storage by Respondents**



**Table 5.67 Domestic water storage**

Q 30 Mode of water Storage	No. of respondents	% n = 220	Cumulative %
Ground/overhead tank	102	46.2	46.2
Containers	23	10.3	56.5
Others	19	8.5	65.0
<b>Total</b>	<b>144</b>	<b>65.0</b>	<b>65.0</b>

**Fig. 5.67 Mode of Domestic Water Storage**



Storage of domestic water by consumers is to cater for use during water cuts and insufficiency of supply. The survey revealed that 144 (65%) of the respondents stored water at their places for domestic consumption; while 76 (35%) did not do so. Two-thirds of the domestic water consumers in Mauritius thus store water at their places. This aspect of the consumer behaviour satisfies the models that have been discussed. Storage is specifically mentioned in the Nicosia model. It is seen as purchase and is an extension of consumption in the other models. The supply of water in Mauritius is subject to sudden interruptions. This is due to unexpected pipe bursts or breakdowns of the pumping stations. Water supply interruptions can also take place in order to allow for pre-planned maintenance or during dry conditions when water production goes down. Storage of water is to the advantage of consumers who can use that water during water cuts.

#### **5.25 AVERAGE WATER CHARGES, AVERAGE VOLUME AND NUMBER OF PERSONS IN FAMILY**

This section gives details of replies to Questions 31, 32 and 33. According to the survey, the average water charge paid per month by each respondent was MUR 148.90 and the average volume was 20.40 m<sup>3</sup>. It is to be noted from

Appendix A that the domestic water tariff increases progressively, that is a higher tariff is applied to a higher consumption band. The average number of persons in each family as per the survey was 3.65.

The observation that can be made is that although there is no laid down local or international standards, a consumption of 5.5 cubic meters of water per person per month is considered adequate based on widely accepted notion. It is also noted from Question 15 that the water related needs of 75% of the respondents were well satisfied ( section 5.15 p. 276)

## **5.26 SETTLEMENT OF WATER BILLS**

According to the law (Government Notice No. 122 of 1992), a 10 per cent surcharge is applied if a water bill is not paid within 21 days of its issue. Moreover, the water supply is liable to be disconnected if the water bill is not paid within 60 days of its delivery. Question 34 of the survey revealed that 181(82%) of the respondents settled their bills within the statutory period of 60 days, while 38 (18%) of them did so after that period. Information from the supplier indicated that this trend was more or less repetitive. The habit in some consumers not to settle water charges in time can be attributed to some extent to the behaviour of the consumers in Mauritius. This aspect has got certain implications. Disconnection of supply is a punitive measure to collect water charges. It is true that non-disconnection of water supplies for non-payment of water cannot be envisaged fully in Mauritius. However, it is felt that disconnection of supply for nonpayment of water charges should be considered as the last resort. The argument in favour of this stand is that water is vital to life and nourishment. It would be in the interest of both the domestic consumer and of the CWA if the latter would strive to change the consumer's habit of not paying water charges in time.

This chapter was so far devoted to the analysis of the consumer survey. The next section 5.27 is devoted to the analysis of means, which is followed by the testing of the hypotheses.

## 5.27 ANALYSIS OF MEANS

An analysis of the mean response of each dependent variable considered in the hypotheses has been carried out. The results are given in tables 5.68.1 to 5.68.10. The independent variables are taken from the hypotheses and are shown in the first column of these tables. This column also specifies the question numbers of the consumer survey. The replies to these questions have been used to analyse the means. For example, in table 5.68.1, the dependent variable refers to the hypothesis H01 and the replies of the respondents refer to question 7 (Q. 7) of the questionnaire. Column two of tables 5.68.1 to 5.68.10 contains the independent variables of the respective hypothesis. Columns three, four and five of these tables contain the mean, number of respondents represented by 'N' and the standard deviation. The total number and the total of means and of standard deviation are given at the end of the table. It is to be noted that the total number of respondents is 220 and that these respondents constitute each category of respondents, namely, ethnic groups, occupational groups, urban/rural areas, age and level of education, with the exception of the number of complainants. Comments with respect to each table follow the table.

The analysis of variance (ANOVA) has been used to compare means for statistically significant differences. The results of the analysis are contained in tables 5.69.1 to 5.69.10 in the next section. The results are discussed at the end of each table.

**Table 5.68.1 - Mean And Standard Deviation :  
Decision-making Process Was Easy**

<b>Hypothesis Dependent Variable</b>	<b>Independent Variable</b>	<b>Mean</b>	<b>N</b>	<b>Std. Dev.</b>
<b>H 01 Q7 Decision making process was easy</b>	Ethnic Groups			
	Hindu	1.76	102	0.89
	Muslim	1.68	34	0.77
	Sino-Mauritian	1.42	24	0.50
	Gen. Population	1.88	60	0.80
	Occupational Groups			
	Professionals	1.55	33	0.56
	Middle Management etc	1.65	49	0.86
	Skilled etc.	1.83	138	0.85
	Urban/Rural			
	Urban	1.47	97	0.71
	Rural	1.96	123	0.84
	Age (years)			
	18 - 29	1.61	23	0.50
	30 - 39	1.72	76	0.79
	40 - 49	1.77	81	0.88
	50 - 59	1.88	33	0.96
	60 and above	1.57	7	0.53
	Education			
	None	2.09	11	1.04
	Primary	1.83	83	0.91
	'O' level	1.87	62	0.78
	'A' level	1.58	26	0.76

<b>Hypothesis Dependent Variable</b>	<b>Independent Variable</b>	<b>Mean</b>	<b>N</b>	<b>Std. Dev.</b>
	University	1.37	38	0.49
	<b>Total</b>	<b>1.75</b>	<b>220</b>	<b>0.82</b>

The mean value of 1.75 in table 1.68,1 for the responses obtained as regards the decision-making process (Q.7, H01) indicates that on average, the respondents tend to find the decision-making process to acquire a domestic water supply rather easy. Yet some differences exist within the different categories of respondents. The mean figures show that the process was easier for Sino-Mauritians as compared to those of other ethnic groups. The mean figures also show that the same process was easier for the professional and managerial group than for the other two occupational groups. As regards the residential regions, respondents in the urban areas found it easier to come to a decision as compared to those in rural areas. Respondents aged 60 and above found the decision process relatively easier as compared to those in the other age groups. Respondents belonging to the 50–59 age group seem to have gone through a relatively tougher decision-making process. The mean figures also show that respondents who had received a university education were more agreeable to the idea that the decision-making process was easier as compared to those with less or without education.

**Table 5.68.2 - Mean And Standard Deviation : Consumption of Domestic Water**

<b>Hypothesis Dependent Variable</b>	<b>Independent Variable</b>	<b>Mean</b>	<b>N</b>	<b>Std. Dev.</b>
<b>H 02 Q32</b>	Ethnic Groups			
<b>Consumption of domestic water</b>	Hindu	18.36	102	11.78
	Muslim	22.35	34	23.96
	Sino-Mauritian	22.25	24	20.03

<b>Hypothesis Dependent Variable</b>	<b>Independent Variable</b>	<b>Mean</b>	<b>N</b>	<b>Std. Dev.</b>
	Gen. Population	22.03	60	16.76
	Occupational Groups			
	Professionals	21.30	33	16.83
	Middle Management etc.	18.78	49	15.54
	Skilled etc.	20.77	138	16.86
	Urban/Rural			
	Urban	21.04	97	20.23
	Rural	19.90	123	12.86
	Age (years)			
	18 - 29	12.30	23	8.61
	30 - 39	19.29	76	16.96
	40 - 49	20.54	81	14.26
	50 - 59	25.21	33	12.35
	60 and above	34.86	7	43.54
	Education			
	None	16.73	11	9.64
	Primary	22.43	83	19.84
	'O' level	19.31	62	13.28
	'A' level	15.12	26	9.21
	University	22.45	38	18.01
	<b>Total</b>	<b>20.40</b>	<b>220</b>	<b>16.49</b>

With regard to the consumption of water (Q.32, H02), the above table 4.68.2 reveals that the average consumption for a household tends to be around 20.40 cubic metres per month. The average consumption is slightly lower among



Hindus compared to the other ethnic groups. The figure for middle management, sales and service workers, and clerks and administrative staff is slightly lower compared to the other occupational groups. The average consumption for urban dwellers appears to be slightly above that of rural residents. As regards the different age groups, the average consumption of water increases as one moves from the youngest age group to the oldest one, that is, where the householder is 60 and above. The figure is highest where the householder has had a university education compared to those with less or without education.

**Table 5.68.3 - Mean And Standard Deviation :  
Water Related Needs Were Well Satisfied**

<b>Hypothesis Dependent Variable</b>	<b>Independent Variable</b>	<b>Mean</b>	<b>N</b>	<b>Std. Dev.</b>
<b>H 03    Q15  Water related needs were well satisfied</b>	Ethnic Groups			
	Hindu	2.27	102	1.15
	Muslim	2.32	34	1.17
	Sino-Mauritian	2.06	24	0.88
	Gen. Population	2.30	60	1.20
	Occupational Groups			
	Professionals	2.42	33	1.15
	Middle Management etc	2.33	49	1.16
	Skilled etc.	2.21	138	1.13
	Urban/Rural			
	Urban	2.06	97	0.88
	Rural	2.43	123	1.29
	<b>Total</b>	<b>2.27</b>	<b>220</b>	<b>1.14</b>

Table 5.68.3 shows that on average respondents were satisfied with the water supplied to them as far as their water related needs were concerned (Q.15, H03). On average, the Sino-Mauritians respondents were most satisfied that their water related needs had been fulfilled compared to those of the other ethnic groups. In the same context, satisfaction was highest among skilled, unskilled and manual workers compared to the other occupational groups. As regards residential regions, urban residents seemed to be more satisfied that their water related needs had been well fulfilled compared to those of rural areas.

**Table 5.68.4 - Mean And Standard Deviation :  
Supply of Domestic Water Was Sufficient**

<b>Hypothesis Dependent Variable</b>	<b>Independent Variable</b>	<b>Mean</b>	<b>N</b>	<b>Std. Dev.</b>
<b>H 04 Q16 Supply of domestic water was sufficient</b>	Ethnic Groups			
	Hindu	2.30	102	1.18
	Muslim	2.41	34	1.18
	Sino-Mauritian	2.21	24	1.02
	Gen. Population	2.33	60	1.30
	Occupational Groups			
	Professionals	2.48	33	1.23
	Middle Management etc.	2.35	49	1.18
	Skilled etc.	2.27	138	1.19
	Urban/Rural			
	Urban	2.05	97	0.91
	Rural	2.53	123	1.34
	Age (years)			
	18 - 29	2.35	23	1.19

Hypothesis Dependent Variable	Independent Variable	Mean	N	Std. Dev.
	30 - 39	2.45	76	1.26
	40 - 49	2.16	81	1.15
	50 - 59	2.39	33	1.14
	60 and above	2.29	7	1.25
	Education			
	None	2.09	11	1.30
	Primary	2.23	83	1.09
	'O' level	2.53	62	1.39
	'A' level	2.15	26	1.12
	University	2.34	38	1.07
	<b>Total</b>	<b>2.32</b>	<b>220</b>	<b>1.19</b>

The total mean value in table 4.68.4 is 2.32. This shows general satisfaction among the respondents when considering the volume of water supplied to them (Q16, H04). The figures show that satisfaction among Sino-Mauritians was highest compared to the other ethnic groups. The table also indicates that there is a tendency for positive perception regarding the supply of water to increase as one moves from the highest category of employment to the lowest one. It is also noticeable that urban dwellers tend to have a more positive perception on this issue than the rural residents. Respondents within the age group of 40-49 seemed to be the most satisfied with their water supply as compared to those in the other age groups. Respondents who had received no education seemed to be the most satisfied compared to those who have had some form of education.

**Table 5.68.5 - Mean And Standard Deviation :  
Drinking Quality of Water Was Good**

<b>Hypothesis Dependent Variable</b>	<b>Independent Variable</b>	<b>Mean</b>	<b>N</b>	<b>Std. Dev.</b>
<b>H 05 Q18  Drinking quality of water was good</b>	Ethnic Groups			
	Hindu	2.06	102	0.91
	Muslim	1.79	34	0.73
	Sino-Mauritian	2.33	24	0.82
	Gen. Population	1.82	60	0.43
	Occupational Groups			
	Professionals	2.09	33	0.80
	Middle Management etc.	1.94	49	0.97
	Skilled etc.	1.97	138	0.70
	Urban/Rural			
	Urban	1.98	97	0.69
	Rural	1.98	123	0.85
	Age (years)			
	18 - 29	2.13	23	0.81
	30 - 39	2.01	76	0.84
	40 - 49	1.98	81	0.76
	50 - 59	1.85	33	0.71
	60 and above	1.86	7	0.69
	Education			
	None	2.00	11	1.10
	Primary	1.92	83	0.63
'O' level	1.94	62	0.77	
'A' level	1.81	26	0.63	

<b>Hypothesis Dependent Variable</b>	<b>Independent Variable</b>	<b>Mean</b>	<b>N</b>	<b>Std. Dev.</b>
	University	2.32	38	1.02
	<b>Total</b>	<b>1.98</b>	<b>220</b>	<b>0.78</b>

The average of 1.98 in table 5.68.5 for the responses obtained to question 18 (H05) of the survey indicates that the positive perception of drinking quality of water was rather high among the respondents. Respondents of the Muslim ethnic group and of the General Population expressed a more positive view compared to those in the other ethnic groups. It is also noted that positive perception is higher for the lower employment categories than for the professionals and managerial group. Perception on this issue was the same among urban and rural respondents. Also, there is an increase of positive perception towards the drinking quality of water as one moves from the lower age categories to the higher ones. Respondents with a university level employment seemed to be least favourable to the idea that the drinking quality of water was good compared to those without or with a lower level of education.

**Table 5.68.6 - Mean And Standard Deviation :  
Willingness to Pay More For A Better Service**

<b>Hypothesis Dependent Variable</b>	<b>Independent Variable</b>	<b>Mean</b>	<b>N</b>	<b>Std. Dev.</b>
<b>H 06      Q18</b>  <b>Willingness to pay more for a better service</b>	Ethnic Groups			
	Hindu	3.75	102	1.11
	Muslim	3.06	34	1.37
	Sino-Mauritian	3.63	24	1.10
	Gen. Population	3.47	60	1.21
	Occupational Groups			

Hypothesis Dependent Variable	Independent Variable	Mean	N	Std. Dev.
	Professionals	3.09	33	1.38
	Middle Management etc.	3.57	49	1.10
	Skilled etc.	3.65	138	1.17
	Urban/Rural			
	Urban	3.79	97	1.12
	Rural	3.36	123	1.23
	Age (years)			
	18 - 29	3.61	23	1.08
	30 - 39	3.33	76	1.23
	40 - 49	3.68	81	1.10
	50 - 59	3.64	33	1.43
	60 and above	3.86	7	1.07
	Education			
	None	3.09	11	1.22
	Primary	3.71	83	1.15
	'O' level	3.58	62	1.24
	'A' level	3.58	26	1.06
	University	3.26	38	1.29
	<b>Total</b>	<b>3.55</b>	<b>220</b>	<b>120</b>

Question 19.1 of the questionnaire tries to establish the willingness of the respondents to pay more for a better service. This aspect is further contained in hypothesis H06. A total average of 3.55 as shown in table 5.68.6 indicates that, on the whole, the respondents were unwilling to increase their disbursement for a better service. Respondents in the Hindu ethnic group were most unwilling to pay more for a better service compared to those in the other ethnic groups. This

unwillingness decreases as one moves from the lower employment categories to the higher ones. As regards the age groups, the unwillingness to pay more for a better service was highest among respondents who were 60 and above. Urban residents seemed to be more opposed to the idea of increased payments for a better service than rural residents.

**Table 5.68.7 - Mean And Standard Deviation :  
Willingness to Pay More For A Better Quality Of Water**

<b>Hypothesis Dependent Variable</b>	<b>Independent Variable</b>	<b>Mean</b>	<b>N</b>	<b>Std. Dev.</b>
<b>H07 Q19.2  Willingness to pay more for a better drinking quality of water</b>	Ethnic Groups			
	Hindu	3.69	102	1.14
	Muslim	3.12	34	1.53
	Sino-Mauritian	3.58	24	1.18
	Gen. Population	3.60	60	1.12
	Occupational Groups			
	Professionals	3.12	33	1.38
	Middle Management etc	3.47	49	1.23
	Skilled etc.	3.70	138	1.11
	Urban/Rural			
	Urban	3.72	97	1.09
	Rural	3.44	123	1.30
	Age (years)			
	18 - 29	3.48	23	1.20
	30 - 39	3.37	76	1.26
	40 - 49	3.72	81	1.09
50 - 59	3.67	33	1.45	

<b>Hypothesis Dependent Variable</b>	<b>Independent Variable</b>	<b>Mean</b>	<b>N</b>	<b>Std. Dev.</b>
	60 and above	3.71	7	0.95
	Education			
	None	3.36	11	1.03
	Primary	3.76	83	1.15
	'O' level	3.53	62	1.28
	'A' level	3.50	26	1.10
	University	3.29	38	1.35
	<b>Total</b>	<b>3.56</b>	<b>220</b>	<b>1.22</b>

Hypothesis H07 and question 19.2 of the consumer survey relate to the consumer's willingness to pay more for a better drinking quality of water. Table 5.68.7 shows a mean of 3.65. This result indicates that the respondents were unwilling to pay more for a better drinking quality of water. Respondents of the Hindu ethnic group were the most opposed to the idea of paying more for a better drinking quality of water as compared to those of the other ethnic groups. This unwillingness increases as one moves from the higher occupational groups to the lower ones. Respondents in the urban areas were more opposed to paying more for a better quality of drinking water compared to those in rural areas. Respondents who were 60 and above were most unwilling to pay more as compared to those in the other age groups. Respondents with a university education were least unwilling to pay more compared to those without or with a lower level of education.



**Table 5.68.8 - Mean And Standard Deviation :  
Consumption of Bottled Water**

<b>Hypothesis Dependent Variable</b>	<b>Independent Variable</b>	<b>Mean</b>	<b>N</b>	<b>Std. Dev.</b>
<b>H08 Q20 Consumption of bottled Water</b>	Ethnic Groups			
	Hindu	3.69	102	1.14
	Muslim	3.12	34	1.53
	Sino-Mauritian	3.58	24	1.18
	Gen. Population	3.60	60	1.12
	Occupational Groups			
	Professionals	3.12	33	1.52
	Middle Management etc.	3.47	49	1.23
	Skilled etc.	3.70	138	1.11
	Urban/Rural			
	Urban	3.72	97	1.09
	Rural	3.44	123	1.30
	Age (years)			
	18 - 29	3.48	23	1.20
	30 - 39	3.37	76	1.26
	40 - 49	3.72	81	1.09
	50 - 59	3.67	33	1.45
	60 and above	3.71	7	0.95
	Education			
	None	3.36	11	1.03
	Primary	3.76	83	1.15
	'O' level	3.53	62	1.28
	'A' level	3.50	26	1.10

<b>Hypothesis Dependent Variable</b>	<b>Independent Variable</b>	<b>Mean</b>	<b>N</b>	<b>Std. Dev.</b>
	University	3.29	38	1.35
	<b>Total</b>	<b>3.56</b>	<b>220</b>	<b>1.22</b>

Consumption of bottled water was established by Question 20 (Q. 20) of the consumer survey and equally refers to hypothesis (H08). The calculated average contained in table 4.68.8 shows a total mean figure of 3.56. This figure indicates that on the whole, the consumption of bottled water in Mauritius did not look very appealing to the respondents. The figures also show that the consumption of bottled water was lowest among respondents of the Hindu ethnic group compared to those in the other ethnic groups. There is also a tendency for consumption of bottled water to decrease as one moves from the higher employment category to the lower ones. The figures also show that consumption of bottled water was higher in rural regions than in urban regions, and higher among higher occupational categories than among lower ones. This consumption was highest for the 30–39 age group. It was also highest for those with a university education compared to those without or with a lower level of education.

**Table 5.68.9 - Mean And Standard Deviation :  
Complaints Handling Was Efficient**

<b>Hypothesis Dependent Variable</b>	<b>Independent Variable</b>	<b>Mean</b>	<b>N</b>	<b>Std. Dev.</b>
<b>H 09    Q25  Complaints handling was efficient</b>	Ethnic Groups			
	Hindu	2.83	23	1.07
	Muslim	2.50	8	0.93
	Sino-Mauritian	2.17	6	0.75
	Gen. Population	2.71	14	1.07
	Occupational Groups			
	Professionals	2.71	7	0.95
	Middle Management etc.	2.44	16	1.03
	Skilled etc.	2.79	28	1.03
	Urban/Rural			
	Urban	2.64	22	0.95
	Rural	2.69	29	1.07
	<b>Total</b>	<b>2.67</b>	<b>51</b>	<b>1.01</b>

Replies to question 25, which also relate to hypothesis H09, were used to calculate the average. Replies to this question come from respondents who had previously made a complaint. As shown in table 4.68.9, the total mean value is 2.67. This figure indicates that, on the whole, respondents rather agreed that their complaints were dealt with efficiently. In this context, the Sino-Mauritians seemed to be the most satisfied among the ethnic groups. Middle management, sales and service workers, and clerks and administrative staff had a more positive perception of the way complaints were being dealt with compared to the

other occupational groups. The perception among urban and rural respondents was almost the same.

**Table 5.68.10 - Mean And Standard Deviation :  
Volume of Water Generally Provided Is Sufficient**

<b>Hypothesis Dependent Variable</b>	<b>Independent Variable</b>	<b>Mean</b>	<b>N</b>	<b>Std. Dev.</b>
<b>H 010 Q28.1  Volume of water generally provided is sufficient</b>	Ethnic Groups			
	Hindu	2.35	102	1.17
	Muslim	2.26	34	1.14
	Sino-Mauritian	2.21	24	0.88
	Gen. Population	2.32	60	1.19
	Occupational Groups			
	Professionals	2.33	33	1.11
	Middle Management etc.	2.45	49	1.23
	Skilled etc.	2.26	138	1.12
	Urban/Rural			
	Urban	2.03	97	0.81
	Rural	2.54	123	1.30
	Age (years)			
	18 - 29	2.57	23	1.12
	30 - 39	2.22	76	1.11
	40 - 49	2.25	81	1.10
	50 - 59	2.45	33	1.25
	60 and above	2.57	7	1.40
	Education			
	None	2.09	11	1.30

<b>Hypothesis Dependent Variable</b>	<b>Independent Variable</b>	<b>Mean</b>	<b>N</b>	<b>Std. Dev.</b>
	Primary	2.22	83	1.07
	'O' level	2.42	62	1.25
	'A' level	2.38	26	1.06
	University	2.37	38	1.13
	<b>Total</b>	<b>2.31</b>	<b>220</b>	<b>1.14</b>

The perception on the volume of water generally provided by the CWA in Mauritius is established by question 28.1 of the consumer survey. This aspect is further contained in hypothesis H010. The total average of 2.31 as shown in table 5.68.10 indicates that, on the whole, respondents were rather satisfied with the volume of water generally supplied by the CWA in Mauritius. The figures also indicate that the Sino-Mauritians had a more positive perception on the issue compared to the other ethnic groups. Respondents in the skilled, unskilled and manual workers group appear to be the most satisfied in this context compared to the other occupational groups. Urban residents appear to have a more positive perception than rural residents on this issue. As regards the different age groups, respondents aged 30-39 appear to be the most satisfied. Finally, respondents without any education expressed a more positive opinion than those who were educated. Otherwise there does not seem to be marked differences between the answers given within each category of respondents.

The next section relates to the testing of the hypotheses.

## **5.28 HYPOTHESIS TESTING AND MEASURES OF ANALYSIS**

The methodology adopted for testing the hypotheses has been explained in detail in sections 4.13 to 4.14 (pp. 191-196). It is recalled here that the ANOVA has been performed to establish the P (Sig.) value in order to accept or reject the hypotheses. The level of significance has been taken at 5%. The main variables used for testing the hypotheses are ethnic groups, occupational groups and urban/rural regions. Data in respect of these variables come from replies to Questions 36, 39 and 35 respectively of the consumer survey. Age and level of education have also been used to test some of the hypotheses in addition to the main variables. Data on these variables come from Questions 37 and 38 of the survey.

### **5.28.1 Hypothesis H01**

H01 :The consumer's involvement in the decision-making process to acquire a domestic water supply as being easy is not related to:

- ethnic groups
- occupational groups
- urban/rural regions
- age
- level of education

For testing H01, replies to question 7 of the consumer survey are taken as the dependent variable (section 5.10 p. 256). Through this question, the respondent is required to state to what extent he found it easy to decide whether or not to have a water supply. Questions 36, 39 and 35 of the questionnaire at Appendix B represent ethnic groups, occupational groups and urban/rural regions respectively. Data on age come from question 37 and those on level of education come from question 38.

**Table 5.69.1: ANOVA for Hypothesis H01**

Hypothesis Dep. Variable	Independent Variables	Sum of Squares	df	Mean Square	F	Sig.	r <sup>2</sup>
H01. Q7 Decision Making Process	<b>ETHNIC GROUPS</b>						
	Between Groups	3.567	3	1.189	1.805	1.47	.025
	Within Groups	141.002	214	.659			
	<b>TOTAL</b>	144.569	217				
	<b>OCCUPATIONAL GROUPS</b>						
	Between Groups	3.029	2	1.514	2.300	.103	.021
	Within Groups	141.540	215	.658			
	<b>TOTAL</b>	144.569	217				
	<b>URBAN/RURAL</b>						
	Between Groups	11.788	1	11.788	19.176	0.000	.082
	Within Groups	132.781	216	.615			
	<b>TOTAL</b>	144.569	217				
	<b>AGE</b>						
	Between Groups	1.068	4	.267	.396	.811	.007
	Within Groups	143.501	213	.674			
<b>TOTAL</b>	144.569	217					
<b>LEVEL OF EDUCATION</b>							
Between Groups	9.354	4	2.338	3.684	.006	.065	
Within Groups	135.215	213	.635				
<b>TOTAL</b>	144.569	217					

The ANOVA in table 4.69.1 shows that at 5% level of significance, hypothesis H01 is supported by ethnic groups (F =1.805,P=1.47), occupational groups (F=2.300, P=.103) and age (F=.396, P=.811) of respondents as the p-value in each case is above 0.05. The values of r square, indicate that the differences in ethnic groups (r<sup>2</sup> = .025), occupational groups (r<sup>2</sup> = .021), and age (r<sup>2</sup> = .007) account respectively for 2.5%, 2.1% and 0.07% of the total variations present in the dependent variable. On the other hand, about 8.2% and 6.5% of the variation present in the dependent variable may be accounted for by differences in rural/urban regions (r<sup>2</sup> =.082) and by the level of education (r<sup>2</sup> = .065) respectively. On the other hand, hypothesis H01 is rejected by urban/rural regions (F = 19.176, P = .000) and by level of education (F = 3.884 and P = .006) respectively. The sustained theory reads as below :-

Theory 1: The consumer's involvement in the decision making process to acquire a domestic water supply as being easy is not related to ethnic groups, occupational groups and age, but is related to urban/rural regions and to level of education.

The variables contained in the sustained theory 1 are ethnic groups, occupational groups, urban/rural regions, age and level of education. Of these variables, age and level of education have effect on the consumer on his decision-making process to acquire a water connection. These variables can be said to be contained in the models that have been reviewed in chapter 3. In the Nicosia model, culture is in the consumer's attributes. In the Howard and Sheth model, culture is in the social input stimuli. In the Engel-Blackwell model, cultural norms and values exist as external influences; while in the Engel-Blackwell-Miniard model, culture and values are presented as variables influencing decision process. At the same time, residential regions, occupational group, age and level of education, which concern the individual consumer, are seen in the consumer's attributes in subfield two in the Nicosia model. In the Howard and Sheth model, the Engel-Blackwell model, residential regions, occupational groups, age and level of education can be viewed to be among the input stimuli. In the Engel-Blackwell model and in the Engel-Blackwell-Miniard model, these variables are seen as individual characteristics. In the integrated model, ethnicity, occupation, residential areas and education can be respectively viewed as social and individual factors influencing consumer behaviour.

It is seen that significant differences do exist between the dependent variable and the independent variables, namely, urban/rural regions and level of education. This is understandable in the case of Mauritius. The consumer's decision to acquire a domestic water supply is affected by the region in which he lives. This is due to the characteristics of the Mauritian society. Familiarity is higher and relationship is closer among rural dwellers. The joint family system is more common in villages. Sharing the water supply of a neighbour or of the



family in a village is considered quite normal. In urban areas such a phenomenon would be considered quite rare. Each city dweller would wish to have his own water supply. This explains the significant differences between the consumer's decision to acquire a domestic water supply and his residential region. The focus groups also opined that the water supply in urban areas was better than that in rural areas and this could influence the behaviour of villagers (section 5.2.1 p. 215). The significant difference between the dependent variable and level of education may be explained by the fact that intellectual ability may be a facilitating agent in decision-making. Theory 1 is of interest as it fulfills the objective of the research mentioned in section 4.2 (p. 168).

#### **5.28.2 HYPOTHESIS H02**

The volume of domestic water consumption in Mauritius is not related to :-

- ethnic groups
- occupational groups
- urban/rural regions
- size of family
- opinion on price of water

For the test of hypothesis H02, replies to question 32 of the survey represent the dependent variable. The replies to this question establish the average volume of water consumed by each respondent per month. Data on the ethnic groups, occupational groups and urban/rural regions and size of family come from questions 36, 39, 35 and 33 respectively. The consumer's perception on price of domestic water in Mauritius comes from question 17.

**Table 5.69.2: ANOVA for Hypothesis H02**

Hypothesis Dep. Variable	Independent Variables	Sum of Squares	df	Mean Square	F	Sig.	r <sup>2</sup>
H02. Q32 Consumption of Water	<b>ETHNIC GROUPS</b> Between Groups	795.219	3	265.073	.974	.406	.013
	Within Groups	58763.776	216	272.055			
	<b>TOTAL</b>	59558.995	219				
	<b>OCCUPATIONAL GROUPS</b> Between Groups	174.915	2	87.458	.320	.727	.003
	Within Groups	59384.080	217	273.659			
	<b>TOTAL</b>	59558.995	219				
	<b>URBAN/RURAL</b> Between Groups	70.331	1	70.331	.258	.612	.001
	Within Groups	59488.664	218	272.884			
	<b>TOTAL</b>	59558.995	219				
	<b>SIZE OF FAMILY</b> Between Groups	24361.649	1	24361.649	150.887	.000	.409
	Within Groups	35197.347	218	161.456			
	<b>TOTAL</b>	59558.995	219				
	<b>PRICE</b> Between Groups	3215.175	3	1091.725	4.109	.007	.0541
	Within Groups	56343.821	216	260.851			
	<b>TOTAL</b>	59558.995	219				

The P values in table 5.69.2 indicate that at 95% level of significance ethnic groups (F = .974, P = .406), occupational groups (F = .320, P = .727) and urban/rural regions (F = .258, P = .612) support hypothesis H02. However, the hypothesis is rejected by the size of family (F = 150.887, P = .000), and the price of domestic water (F = 4.109, P = .007). The values of r square indicate that differences in ethnic groups (r<sup>2</sup> = .013), occupations (r<sup>2</sup> = .003) and residential areas (r<sup>2</sup> = .001) can only account for approximately 1.3%, 0.3% and 0.1% respectively of the total variations present in the dependent variable. On the other hand, about 4.0% and 5.4% of the variations foreseen in the dependent variable may be accounted by differences in the size of the family (r<sup>2</sup> = .409) and price of domestic water (r<sup>2</sup> = .054). The sustained theory reads as below:-

Theory 2 : The volume of domestic water consumption in Mauritius is not related to ethnic groups, occupational groups and to urban/rural regions, but is related to size of family and opinion on price of water.

Water as a product is unique, without substitute and vital for life and nourishment. This helps to explain theory 2 in so far as the consumption of domestic water in Mauritius remains unaffected by ethnic, occupational and residential factors. However, such consumption obviously varies according to the size of family. At the same time, consumers tend to control their usage of water according to their ability and willingness to pay the price as well as perception to price. This explains the significant difference between the consumption of domestic water in Mauritius and the size of family and price of water. The focus group expressed a similar opinion. According to them, the price of water, the size of the family and level of education were likely to influence the consumption of water.

Sustained theory 2 can be viewed within the context of the models of consumer behaviour that have been reviewed in chapter 3. Consumption, price and the social and individual characteristics contained in theory 2 are important elements in consumer behaviour. In the Nicosia model, price is seen in the consumer's evaluation of means-ends in field two, while consumption takes place in field four. The consumer's ethnic group, occupation and residential area which can be situated in sub-field two in the Nicosia model are the consumer's attributes. In the Howard and Sheth model, price is seen as significant and symbolic input stimuli; while consumption follows purchase. In this model, ethnic groups, occupational groups and residential areas are seen as reference groups and social class inputs stimuli. In both the Engel-Blackwell model and in the Engel-Blackwell-Miniard model, price is marketer-dominated, while consumption follows choice. In the Engel-Blackwell model, ethnic groups, occupational groups and residential areas are represented by cultural norms and values and reference groups. These variable are shown in the Engel-Blackwell-Miniard model as social influences, culture, reference group and situational influences. In

the integrated model, these variables exist as individual, social and situational variables. Thus, Theory 2 fulfills the objective of the research set down in section 4.2 (p. 164).

### 5. 28.3 Hypothesis H03

H03 :The water related needs of domestic consumers in Mauritius being met by the supply of water are not related to:-

- ethnic groups
- occupational groups
- urban/rural regions

As explained in section 1.3 (p. 3), the water related needs of domestic consumers in Mauritius mean water required for drinking, washing or cooking or for other purpose of domestic use. For the test of the hypothesis H03, replies to question 15 of the consumer survey represent the dependent variable (section 5.15 p. 277). According to this question, respondents were required to state to what extent their water related needs were well satisfied by the water supplied to them. Data on ethnic groups, occupational groups and urban/rural regions are taken from questions 36, 39 and 35 respectively.

**Table 5.69.3: ANOVA for Hypothesis H03**

Hypothesis Dep. Variable	Independent Variables	Sum of Squares	Df	Mean Square	F	Sig.	r <sup>2</sup>
H03. Q15 Water related Needs	<b>ETHNIC GROUPS</b>						
	Between Groups	1.316	3	.439	.334	.800	.005
	Within Groups	280.780	214	1.312			
	<b>TOTAL</b>	282.096	217				
	<b>OCCUPATIONAL GROUPS</b>						
	Between Groups	1.59	2	.580	.444	.642	.004
	Within Groups	280.937	215	1.307			
	<b>TOTAL</b>	282.096	217				
	<b>URBAN/RURAL</b>						
Between Groups	7.521	1	7.521	5.916	.016	.027	
Within Groups	274.576	216	1.271				
<b>TOTAL</b>	282.096	217					

According to the ANOVA in table 4.69.3, Hypothesis H03 is supported by ethnic groups ( $F = .334$ ,  $P = .800$ ) and occupational groups ( $F = -.444$ ,  $P = .642$ ), and is rejected by urban/rural regions ( $F = 5.916$ ,  $P = .016$ ). The values of  $r$  square indicate that the differences in ethnic groups ( $r^2 = .005$ ) and occupational groups ( $r^2 = .004$ ) account respectively for 0.5% and 0.4% of the total variations present in the dependent variable. At the same time about 2.7% of variation present in the dependent variable may be explained by differences in rural/urban regions ( $r^2 = .027$ ). The sustained theory reads :-

Theory 3 : The water related needs of domestic consumers in Mauritius being met by the supply of water is not related to ethnic groups and occupational groups but is related to urban/rural regions.

Theory 3 which has been developed throws light on the satisfaction/dissatisfaction of the domestic consumers as regards their water related needs being fulfilled by the supply of water in Mauritius. Satisfaction/dissatisfaction is the outcome of consumption and is contained in the models of consumer behaviour that have been reviewed in Chapter 3. The Nicosia model shows satisfaction/ dissatisfaction in experience and feedback in field four. Satisfaction in the learning construct in the Howard and Sheth model is a consequence of consumption. In the Engel-Blackwell model, consumption results in dissonance or satisfaction of needs. In the Engel-Blackwell-Miniard model, consumption again leads to dissonance or satisfaction of needs. These are influenced by marketer dominated variables like individual characteristics, social influences and situational factors. In the integrated model, satisfaction of needs or problem recognition is seen in the consumer's satisfaction following consumption.

Theory 3 is in line with the models that have been literature reviewed. Ethnic groups and occupational groups include cultural norms and values, reference groups, social and situational factors, consumer's attributes and individual characteristics. Theory 3 sustains that ethnic groups and occupational groups have the same effect on the domestic consumers in Mauritius as far as

their water related needs being fulfilled by the supply of water to them is concerned. As far as urban/rural regions are concerned, the development of theory 3 suggests inequality as regards domestic water related needs being met by the supply of water. This view is supported by the focus groups (section 4.2.1, p. 215). This is due to the particularity of the local context where the supply of water in urban areas is relatively better than that in rural regions. The urban areas generally receive twenty-four hour supply unlike many rural regions. Theory 3 fulfills the objective set down in section 4.2 ( p. 168).

#### **5.28.4 Hypothesis H04**

H04 : The perception of domestic consumers in Mauritius on volume of water supplied to them as being sufficient is not related to :

- Ethnic groups
- Occupational groups
- Urban/rural regions
- Age
- Level of education

The volume of water supplied means water supplied through the water distribution pipe network by the CWA to domestic consumers in Mauritius. Hypothesis H04 is a follow up of hypotheses H02 and H03. Hypothesis H04 brings the CWA as the supplier of water in Mauritius into the picture and reveals the perception of the domestic consumer on the supply of water. Replies to Question 16 of the survey questionnaire represent the dependent variable (section 5.16 p. 278 ). The respondents were required to state the extent to which they agreed or disagreed to the volume of water supplied to them as being sufficient. As already mentioned in the testing of hypothesis H01, the independent variables are based on questions 36, 39, 35, 37 and 38 respectively.

**Table 5.69.4: ANOVA for Hypothesis H04**

Hypothesis Dep. Variable	Independent Variables	Sum of Squares	Df	Mean Square	F	Sig.	r <sup>2</sup>
H04. Q16 Supply of Domestic water	<b>ETHNIC GROUPS</b> Between Groups	.622	3	.207	.145	.933	.002
	Within Groups	309.105	216	1.431			
	<b>TOTAL</b>	309.727	219				
	<b>OCCUPATIONAL GROUPS</b> Between Groups	1.303	2	.652	.458	.633	.004
	Within Groups	308.424	217	1.421			
	<b>TOTAL</b>	309.727	219				
	<b>URBAN/RURAL</b> Between Groups	12.335	1	12.335	9.042	.003	.040
	Within Groups	297.393	218	1.364			
	<b>TOTAL</b>	309.727	219				
	<b>AGE</b> Between Groups	3.499	4	.875	.614	.653	.011
	Within Groups	306.228	215	1.424			
	<b>TOTAL</b>	309.727	219				
	<b>LEVEL OF EDUCATION</b> Between Groups	4.795	4	1.199	.845	.498	.015
	Within Groups	304.932	215	1.418			
	<b>TOTAL</b>	309.727	219				

As per the P values of the ANOVA in table 4.69.4, Hypothesis H04 is supported by ethnic groups ( F = .145, P = 0.933), occupational groups (F = .458, P=.633), age (F = .614, P= .653), level of education (F = .845, P=.498) and is rejected by urban/rural regions (F = .042 P=.003). From the results of the statistical tests and the values of the r square, it may be said that 0.2%, 0.4%, 1.1% and 1.5% of the total variations present in the dependent variable may be accounted for respectively by the differences in ethnic groups (r<sup>2</sup>= .002), occupational groups (r<sup>2</sup>= .004), age (r<sup>2</sup>= .011), and level of education (r<sup>2</sup>= .015). However, urban/rural regions may account for 4.0% of the total variations present in the dependent variable. The sustained theory is as below :-

Theory 4 : The perception of domestic consumers in Mauritius on volume of water supplied to them as being sufficient is not related to

ethnic groups, occupational groups, age and level of education but is related to urban/rural regions.

Theory 4 can be viewed within the contexts of the models that have been reviewed. Comments in sections 5.28.1, 5.28.2 and 5.28.3 (pp. 346, 349, 352) clearly explain that the three main variables, namely, ethnic groups, occupational groups, urban/rural regions are present in all these models that have been reviewed. Age and level of education are the consumer's attributes and individual characteristics that exist in these models (section 5.28.1 p. 346). Theory 4 deals with the supply of water as perceived by the domestic consumers in Mauritius. This aspect is directly related to the consumer's 'experience' in the Nicosia model and is responsible for 'attitude' formation in the Howard and Sheth model. In both the Engel-Blackwell model and in the Engel-Blackwell-Miniard model, this perception is responsible for the consumer's attitude. In the integrated model, the perception of the consumer in a product is seen in his beliefs, attitudes and intentions. Theory 4 sustains that the perception of domestic consumers as regards the supply of water in Mauritius is not affected by factors like ethnic groups, occupational groups, age and level of education. However, it is noted that rural residents have a lower perception as to whether water is sufficiently supplied around the island compared to urban residents. The focus group also noted that water supply in some rural areas was not as good as in urban areas (section 4.2.1 p. 172). As mentioned in the context of the previous hypothesis, this perception may be explained by the fact that the supply of water in urban areas is better than that in many rural regions. Urban areas benefit from a twenty-four hour supply unlike many villages.

### **5. 28.5 Hypothesis H05**

H05: The drinking quality of water perceived by domestic consumers in Mauritius as being good is not related to:



- Ethnic groups
- Occupational groups
- Urban/rural regions
- Age
- Level of education

According to this question, respondents were required to state how far they agreed or disagreed that the drinking quality of water in Mauritius was good. For the test of hypothesis H05, replies to question 18 of the consumer survey represent the dependent variable (section 5.18 p. 291). The independent variables are represented by replies to questions 36, 39, 35, 37 and 38 respectively.

**Table 5.69.5: ANOVA for Hypothesis H05**

Hypothesis Dep. Variable	Independent Variables	Sum of Squares	Df	Mean Square	F	Sig.	r <sup>2</sup>
<b>H05. Q18</b> Quality of Water	<b>ETHNIC GROUPS</b> Between Groups	6.200	3	2.067	3.520	.016	.0471
	Within Groups	125.635	214	.611			
	<b>TOTAL</b>	131.835	217				
	<b>OCCUPATIONAL GROUPS</b> Between Groups	.556	2	.298	.455	.635	.004
	Within Groups	131.279	215	.611			
	<b>TOTAL</b>	131.835	217				
	<b>URBAN/RURAL</b> Between Groups	.002	1	.002	.004	.950	.000
	Within Groups	131.832	216	.610			
	<b>TOTAL</b>	131.835	217				
	<b>AGE</b> Between Groups	1.776	4	.444	.727	.574	.013
	Within Groups	130.059	213	.611			
	<b>TOTAL</b>	131.835	217				
	<b>LEVEL OF EDUCATION</b> Between Groups	5.776	4	1.444	2.440	.048	.044
	Within Groups	126.059	213	.592			
	<b>TOTAL</b>	131.835	217				

According to the ANOVA in table 4.69.5, occupational groups ( $F = .455$ ,  $P = .635$ ), urban/rural regions ( $F = .004$ ,  $P = 0.950$ ), age ( $F = .727$ ,  $P = 0.574$ ) support Hypothesis H05, while ethnic groups ( $F = 3.520$ ,  $P = .016$ ) and level of education ( $F = 2.440$ ,  $P = 0.048$ ) reject the hypothesis. The statistical tests indicate that 0.4%, 0.6% and 1.3% of the total variations in the dependent variable may be explained by differences in occupational groups ( $r^2 = .004$ ), urban/rural regions ( $r^2 = .006$ ) and age ( $r^2 = .013$ ). On the other hand, the ethnic groups ( $r^2 = .047$ ) and the educational factor ( $r^2 = .044$ ) respectively account for 4.7% and 4.4% of the total variations present in the dependent variable. The sustained hypothesis is as below :-

Theory 5 : The drinking quality of water perceived by domestic consumers in Mauritius as being good is not related to occupational groups, urban/rural regions and age but is related to ethnic groups and to level of education.

The variables contained in theory 5 are among the factors contained in the models that have been reviewed in chapter 3. The quality of a product along with individual, social and environmental factors are important elements in consumer behaviour. 'Experience' following consumption determines the consumer's predisposition for a product in the Nicosia model. At the same time, alternative evaluation which is in the means-ends evaluation process also follows 'experience'. In the Howard and Sheth model, satisfaction with a product determines attitude formation and confidence in the consumer. In the Engel-Blackwell model, satisfaction is responsible for the consumer's attitude, belief and intention, while dissatisfaction leads to further external search. The same process is seen in the Engel-Blackwell-Miniard model. In the integrated model, the outcome determines the satisfaction or dissatisfaction with a product.

Theory 5 reveals that the quality of drinking water in Mauritius is perceived in similar manner by domestic consumers irrespective of their occupational

groups, residential regions and age. Different ethnic groups have different backgrounds which explain different perceptions to the drinking quality of water in Mauritius. At the same time, consumers of different educational levels may perceive quality differently because understanding of things and faculty of judgement varies with the level of education. The focus groups had also discussed on the drinking quality of water and a minority of the members had expressed reservation on the issue (section 5.2.7, p. 218). Theory 5 fulfills the objective of the research and replies to the problems mentioned in section 4.2 (p. 168).

#### **5.28.6 Hypothesis H06**

H06: The domestic consumer's willingness to pay more for a better service in Mauritius is not related to:

- ethnic groups
- occupational groups
- urban/rural regions
- age
- level of education

Willingness to pay more means that the consumer is voluntarily and without any pressure on him prepared to spend more. In the context of hypothesis H06, the consumer's willingness to pay more is in relation to the services provided by the CWA in Mauritius and include the supply of water. For the testing of hypothesis H06, replies to question 19.1 of the consumer survey represent the dependent variable (section 5.19 p. 290). According to this question, respondents were required to state the extent to which they were willing to pay more for a better service from the CWA. The independent variables come from questions as explained for the test of hypothesis H01.

**Table 5.69.6: ANOVA for Hypothesis H06**

Hypothesis Dep. Variable	Independent Variables	Sum of Squares	df	Mean Square	F	Sig.	r <sup>2</sup>
H06. Q19.1 Willingness to Pay more for a Better service	<b>ETHNIC GROUPS</b> Between Groups	15.505	3	5.168	3.280	.022	.051
	Within Groups	286.780	182	1.576			
	<b>TOTAL</b>	302.285	185				
	<b>OCCUPATIONAL GROUPS</b> Between Groups	9.959	2	4.980	3.117	.047	.033
	Within Groups	292.326	183	1.597			
	<b>TOTAL</b>	302.285	185				
	<b>URBAN/RURAL</b> Between Groups	14.429	1	14.429	9.223	.003	.048
	Within Groups	287.856	184	1.564			
	<b>TOTAL</b>	302.285	185				
	<b>AGE</b> Between Groups	5.095	4	1.274	.889	.471	.016
	Within Groups	305.112	213	1.432			
	<b>TOTAL</b>	310.206	217				
	<b>LEVEL OF EDUCATION</b> Between Groups	9.541	4	2.385	1.475	.212	.039
	Within Groups	292.744	181	1.617			
	<b>TOTAL</b>	302.285	185				

According to the ANOVA in table 4.69.6, Hypothesis H06 is supported by age ( $F = 0.889$ ,  $p=.471$ ), level of education ( $F = 1.475$ ,  $p=.212$ ) and rejected by ethnic groups ( $F = 3.280$ ,  $p= .022$ ), occupational groups ( $F = 3.117$ ,  $p= .047$ ) and urban/rural regions ( $F = 9.223$ ,  $p= .003$ ). In terms of the explanatory power, ethnic groups ( $r^2 = .051$ ), occupational groups ( $r^2 = .033$ ), and urban/rural regions ( $r^2 = .048$ ) respectively account for 5.1%, 3.3% and 4.8% of the total variations present in the dependent variable. At the same time 1.6% and 3.2% of the total variations present to the dependent variable may be explained by difference in age ( $r^2 = .016$ ) and level of education ( $r^2 = .032$ ). The sustained theory reads as follows:-

Theory 6 : The domestic water consumer's willingness to pay more for a better service is not related to age and level of education but is related to ethnic groups, occupational groups and urban/rural regions.

The statistical tests indicate that no significant differences exist between the dependent variable and the consumer's age and level of education. This aspect can be explained by the fact that willingness to pay more implies availability of money and wealth which do not necessarily depend on the age or education of a person. The tests further indicate that significant differences do exist between the dependent variable and the independent variables, namely, ethnic groups, occupational groups and urban/rural regions. This result is understandable. Different cultures may have different views towards savings and expenditure. This may in one way explain the differences in willingness to pay more for a better service in the local context. Similarly, different occupations may also imply different perceptions as regards income. Hence the significant difference between the willingness to pay more for a better service and occupational groups. At the same time, villagers with inadequate water supply may wish to have a better service even if they were to pay more. Many rural areas do not have a twenty-four hour water supply service as in the urban areas.

Willingness of consumers to pay more is an important clue to the supplier as regards the product. Willingness to pay is seen in the evaluation of means-ends in field two of the Nicosia model. In the Howard-Sheth model, willingness to pay is in intention in the learning construct. In the Engel-Blackwell model and in the Engel-Blackwell-Miniard model, it is in yielding/acceptance and in the alternative evaluation. The consumers' attributes in the Nicosia model, reference groups and social class in the Howard and Sheth model, cultural norms, values and reference groups in the Engel-Blackwell model and social influences, culture and reference groups in the Engel-Blackwell-Miniard model have a role to play in willingness to pay more in consumer behaviour. In the integrated model, the evaluation criteria includes the element of price and equally implies the

willingness to pay. Theory 6 sustains that the willingness of domestic consumers to pay more for a better service in Mauritius is affected in similar manner by age and level of education, but differently by ethnic groups, occupational and residential factors. Theory 6 thus contributes towards meeting the objective of the research and in replying to the problems mentioned in section 4.2 (p. 168).

#### **5.28.7 HYPOTHESIS H07**

H07: The domestic consumer's willingness to pay more for a better quality of drinking water in Mauritius is not related to:-

- ethnic groups
- occupational groups
- urban/rural regions
- age
- level of education

Willingness to pay more has the same meaning as in the previous hypothesis H06. Hypothesis H07 is similar to H06 except that it refers to the domestic consumers' willingness to pay more for a better quality of water in Mauritius. Replies to question 19.2 of the consumer survey represent the dependent variable (section 5.19 p. 297). Comments on the independent variables are as contained in section 4.28.1 (p. 346).

**Table 5.69.7: ANOVA for Hypothesis H07**

Hypothesis Dep. Variable	Independent Variables	Sum of Squares	df	Mean Square	F	Sig.	r <sup>2</sup>
H07. Q19.2 Willingness to Pay more for a Better quality of Water	<b>ETHNIC GROUPS</b> Between Groups	9.779	3	3.260	1.999	.116	.031
	Within Groups	303.295	186	1.631			
	<b>TOTAL</b>	313.074	189				
	<b>OCCUPATIONAL GROUPS</b> Between Groups	10.936	2	5.468	3.384	.036	.035
	Within Groups	302.138	187	1.616			
	<b>TOTAL</b>	313.074	189				
	<b>URBAN/RURAL</b> Between Groups	6.833	1	6.833	4.195	.042	.022
	Within Groups	306.241	188	1.629			
	<b>TOTAL</b>	313.074	189				
	<b>AGE</b> Between Groups	9.147	4	2.287	1.392	.238	.029
	Within Groups	303.927	185	1.643			
	<b>TOTAL</b>	313.074	189				
	<b>LEVEL OF EDUCATION</b> Between Groups	8.120	4	2.030	1.231	.299	.026
	Within Groups	304.954	185	1.648			
	<b>TOTAL</b>	313.074	189				

The ANOVA on table 4.69.7 shows that Hypothesis H07 is supported by ethnic groups (F = 1.999, p= .116), age (F = 1.392, p= .238), level of education ( F = 1.231, p= .299) and rejected by occupational groups (F = 3.884, p= .036) and urban/rural regions (F = 4.195, p= .042). The values of r square indicate that ethnic groups (r<sup>2</sup> = .031), age (r<sup>2</sup> = .029) and level of education (r<sup>2</sup> = .026) may account for 3.1%, 2.9% and 2.6% respectively for the total variations present in the dependent variables. At the same time, 3.5% and 2.2% of the total variations present in the dependent variable may be explained respectively by differences in occupation ( r<sup>2</sup> = .035) and urban/rural regions ( r<sup>2</sup> = .022) The sustained theory reads :

Theory 7 : The domestic water consumer's willingness to pay more for a better quality of drinking water in Mauritius is not related to ethnic groups, age and level of education, but is related to occupational groups and urban/rural regions.

A consumer's willingness to pay has been generally commented upon while discussing the previous hypothesis H06. These comments also generally apply to hypothesis H07. Theory 7 sustains that domestic consumers' willingness to pay more for a better quality of drinking water in Mauritius is affected similarly by ethnic groups, age and the level of education of the consumers, but differently by occupational and residential factors. It is noted that while in theory 6, the consumer's willingness to pay more is for a better service is related to ethnic group, this willingness to pay more in theory 7 for a better quality of drinking water is not related to ethnic groups. This implies that in the case of Mauritius, consumers generally attach importance to the drinking quality of water. Theory 7 replies to the problems raised in section 4.2 (p. 168) and assists in meeting the objective of the research.

#### **5. 28.8        HYPOTHESIS H08**

H08: The consumption of bottled water in Mauritius is not related to:

- Ethnic groups
- Occupational groups
- Urban/rural regions
- Age
- Level of education

Hypothesis H08 refers to the consumption of bottled water by domestic consumers in Mauritius. For testing this hypothesis, replies to question 20 of the consumer survey are taken as the dependent variable (section 5.20 p. 298). According to this question, the respondents were required to state the frequency with which they consumed bottled water. The set of independent variables are as specified for the preceding hypothesis.



**Table 5.69.8: ANOVA for Hypothesis H08**

Hypothesis Dep. Variable	Independent Variables	Sum of Squares	df	Mean Square	F	Sig.	r <sup>2</sup>
<b>H08. Q20</b> Consumption Of bottled water	<b>ETHNIC GROUPS</b> Between Groups	9.402	3	3.134	415.2	.007	.055
	Within Groups	163,035	216	.755			
	<b>TOTAL</b>	172.436	219				
	<b>OCCUPATIONAL GROUPS</b> Between Groups	22.919	2	11.460	16.632	.000	.133
	Within Groups	149.517	217	.689			
	<b>TOTAL</b>	172.436	219				
	<b>URBAN/RURAL</b> Between Groups	1.610	1	1.610	2.055	.153	.009
	Within Groups	170.826	218	.784			
	<b>TOTAL</b>	172.436	219				
	<b>AGE</b> Between Groups	.242	4	0.60	.075	.990	.001
	Within Groups	172.194	215	.801			
	<b>TOTAL</b>	172.436	219				
	<b>LEVEL OF EDUCATION</b> Between Groups	22.022	4	5.505	7.869	.000	.128
	Within Groups	150.414	215	.700			
	<b>TOTAL</b>	172.436	219				

The ANOVA in table 4.69.8 shows that Hypothesis H08 is supported by urban/rural regions ( $F = 2.055$ ,  $p = .153$ ), age ( $F = .075$ ,  $p = .990$ ) and rejected by ethnic groups ( $F = 4.152$ ,  $p = .007$ ), occupation ( $F = 16.632$ ,  $p = .000$ ) and level of education ( $F = 7.869$ ,  $p = .000$ ). The statistical tests further show that urban/rural regions ( $r^2 = .009$ ) and age ( $r^2 = .001$ ) may account for 0.9% and 0.1 % respectively for the total variations present in the dependent variable. At the same time, ethnic groups ( $r^2 = .055$ ), occupational groups ( $r^2 = .133$ ) and level of education ( $r^2 = .128$ ) may respectively account for 5.5%, 13.3% and 12.8% of the total variations present in the dependent variable. The sustained theory therefore reads :-

Theory 8 : The consumption of bottled water by domestic consumers in Mauritius is not related to urban/rural regions and age, but is related to ethnic groups, occupational groups and level of education.

In the case of Mauritius, bottled water is available for purchase both in urban and rural areas alike. Also, it is meant for all consumers, whether young or old alike. This explains the fact that the consumption of bottled water in Mauritius remains unaffected by the residential area and age of the consumer. However, according to theory 8, such consumption is influenced by ethnic groups, occupational groups and level of education. This can be explained by the fact that different cultures have different perceptions on water and its quality. Also occupation implies earning power and therefore ability to pay for bottled water which generally costs more than tap water. Finally, perception on quality of water and therefore of bottled water varies with level of education. According to the consumer survey, lack of confidence in the quality of tap water and affordability were responsible for the consumption of bottled water in Mauritius (section 5.20 p. 298).

Theory 8 takes into consideration the models that have been reviewed. Section 4.14 (p. 192) explains the presence of ethnic groups, occupational groups, residential areas, age and level of education in the models. Theory 8 refers to the consumption of bottled water by domestic consumers as an alternative to tap water. In the case of Mauritius, the alternative to domestic tap water is bottled water available on the market. Alternative evaluation is seen in all the models that have been discussed. In the Nicosia model, the consumer makes an evaluation of means-ends. In the Howard and Sheth model, alternative evaluation is seen in 'choice criteria' in the learning construct. In the Engel-Blackwell model and in the Engel-Blackwell-Miniard model, alternative evaluation is clearly mentioned in the decision process stage. In the integrated model, evaluation includes the evaluation of alternatives. Theory 8 contributes towards fulfilling the objective of the research.

### 5.28.9 Hypothesis H09

H09: The manner in which consumers' complaints are dealt with by the CWA employees in Mauritius is not related to

- Ethnic groups
- Occupational groups
- Urban/Rural regions

Hypothesis H09 is devoted to the post consumption behaviour of domestic water consumers in Mauritius. It relates to the complaints handling process by the CWA. By way of general definition, it may be stated that a consumer expects his complaint to be resolved efficiently. Replies to question 25 of the survey questionnaire represent the dependent variable (section 5.21.2 p. 310). According to this question, the respondent was required to state the extent to which his complaint was dealt with efficiently by the CWA. The independent variables are represented respectively by questions 36, 39 and 35.

**Table 5.69.9: ANOVA for Hypothesis H09**

Hypothesis Dep. Variable	Independent Variables	Sum of Squares	df	Mean Square	F	Sig.	r <sup>2</sup>
H09. Q25 Complaints Handling	<b>ETHNIC GROUPS</b> Between Groups	1.366	3	.455	.326	.807	.005
	Within Groups	293.569	210	1.398			
	<b>T O T A L</b>	294.935	213				
	<b>OCCUPATIONAL GROUPS</b> Between Groups	2.442	2	1.221	.881	.416	.008
	Within Groups	292.493	211	1.386			
	<b>T O T A L</b>	294.935	213				
	<b>URBAN/RURAL</b> Between Groups	.152	1	.152	.109	.741	.001
	Within Groups	294.782	212	1.390			
	<b>T O T A L</b>	294.935	213				

According to the ANOVA in table 4.69.9, Hypothesis H09 is supported by ethnic groups ( $F = .326$ ,  $p=.807$ ), occupational groups ( $F = .881$ ,  $p=.416$ ) and urban/rural regions ( $F = .109$ ,  $p=.741$ ). In terms of the explanatory power, ethnic groups ( $r^2 = .005$ ), occupational groups ( $r^2 = .008$ ) and residential factors ( $r^2 = .001$ ) may respectively account for 0.5%, 0.8% and 0.1% of the total variations in the dependent variable. The sustained theory reads:

Theory 9 : The manner in which domestic water consumers' complaints are dealt with by the CWA employees in Mauritius is not related to ethnic groups, occupational groups and urban/rural regions.

Consumers' complaints reveal the post-consumption behaviour and emanate from dissatisfaction/ dissonance. This aspect is present in all the models that have been reviewed. The Nicosia model makes mention of the consumer's experience and feedback in field four. In the Howard and Sheth model, satisfaction in the post-consumption stage leads to confidence and attitude formation. Likewise, dissatisfaction/ dissonance is responsible for lack of confidence and negative attitude. In the Engel-Blackwell model, and in the Engel-Blackwell-Miniard model, the consumer engages in external search in case of dissonance. A similar situation applies in the integrated model. Dissatisfaction, which often is the root of complaints, leads to external search. Theory 9 takes into consideration these models. In the event of dissatisfaction/dissonance, the domestic water consumer in Mauritius addresses his complaint to the CWA. Such complaints are made in person at the customer service centres or to the 24-hour Hot line service. According to theory 9, there appears to be no evidence at the 5% level of significance that the way in which complaints are dealt with at the CWA is perceived to be guided by occupational, residential and ethnic considerations. Theory 9 contributes towards fulfilling the objective of the research and clarifies the problem areas mentioned in section 4.2 ( p. 168).

### 5.28.10 HYPOTHESIS H010

H010 :The perception of domestic consumers in Mauritius on volume of water generally provided in Mauritius by the CWA is not related to:

- ethnic groups
- occupational groups
- urban/rural regions
- age
- level of education

Hypothesis H010 refers to the water supplied to domestic consumers generally in Mauritius by the CWA. It gives a general view of water supply in the country. The dependent variable is represented by replies to question 28.1. According to this question, the respondent was required to state the extent to which he agreed or disagreed that the volume of water generally supplied by the CWA to consumers was sufficient. Data in respect of the independent variables come from questions as for Hypothesis H01 as explained in section 5.28.1 ( p. 346).

**Table 5.69.10: ANOVA for Hypothesis H010**

Hypothesis Dep. Variable	Independent Variables	Sum of Squares	df	Mean Square	F	Sig.	r <sup>2</sup>
H010. Q28.1 Volume of water Generally Provided	<b>ETHNIC GROUPS</b> Between Groups	.455	3	.152	.116	.951	.002
	Within Groups	282.431	215	1.314			
	<b>TOTAL</b>	282.886	218				
	<b>OCCUPATIONAL GROUPS</b> Between Groups	1.131	2	.566	.434	.649	.004
	Within Groups	281.755	216	1.304			
	<b>TOTAL</b>	282.886	218				
	<b>URBAN/RURAL</b> Between Groups	13.610	1	13.610	10.968	.001	.048
	Within Groups	269.276	217	1.241			
	<b>TOTAL</b>	282.886	218				

	<b>AGE</b>						
	Between Groups	3.653	4	.913	.700	.593	.013
	Within Groups	279.233	214	1.305			
	<b>T O T A L</b>	282.886	218				
	<b>LEVEL OF EDUCATION</b>						
	Between Groups	2.408	4	.602	.459	.765	.009
Within Groups	280.477	214	1.311				
<b>T O T A L</b>	282.886	218					

According to the result of the ANOVA on table 4.69.10, Hypothesis H010 is supported by ethnic groups ( $F = .116$ ,  $p=.951$ ), occupational groups ( $F = .434$ ,  $p=.649$ ), age ( $F = .700$ ,  $p=.593$ ), level of education ( $F = .459$ ,  $p=.765$ ) and is rejected by urban/rural regions ( $F = 10.968$ ,  $p=.001$ ). The values of  $r$  square indicate that differences in ethnic group ( $r^2 = .002$ ), occupational ( $r^2 = .004$ ), age ( $r^2 = .013$ ) and level of education ( $r^2 = .009$ ) may respectively account for 0.2%, 0.4%, 1.3% and 0.9% of the total variations present in the dependent variable. At the same time, the explanatory power of the residential factor ( $r^2 = .048$ ) may account for 4.8% of the total variation present in the dependent variable. The sustained theory reads as follows :-

Theory 10 : The perception of domestic consumers on volume of water generally provided in Mauritius by the CWA is not related to ethnic groups, occupational groups, age and level of education but is related to urban/rural regions.

Hypothesis H010 refers to the water supplied to domestic consumers generally in Mauritius by the CWA. It points towards a general view of water supply in the country. Theory 10 is a logical sequence of the previous theories. Statistical results show no significant difference between the dependent variable and ethnic groups, occupational groups, age and level of education. However, the test also shows a significant difference between the dependent variable and residential areas. This result can be explained by the fact that water supply in the

urban areas is relatively better than that in villages. Unlike in many rural areas, water supply in urban areas is on a twenty-four hour basis.

Theory 10 takes into consideration the models that have been reviewed. The independent variables are present in all the models as shown in section 5.28.1 (p. 346). The consumer's perception of a product determines his consumer behaviour. In the Nicosia model, the perception of the consumer emanates from his experience in field four. In the Howard and Sheth model, the consumer's perception is determined by satisfaction and confidence (and therefore by dissatisfaction and distrust also) in the learning construct. In the Engel-Blackwell model, the consumer's perception, that is, beliefs, attitude and intention, depends on dissonance/satisfaction experienced by him. The same occurs in the Engel-Blackwell-Miniard model and in the integrated model. Moreover, the focus groups were clear on the disparity in water supply between urban and rural areas. For them, water supply in urban areas was better than that in many rural areas. Theory 10 sustains that the independent variables ,namely, ethnic groups, occupational groups, age and level of education affect the domestic consumer's perception in similar manner as regards the volume of water generally provided by the CWA in Mauritius. However, as explained in the previous paragraph, this perception is related to urban/rural regions. This theory further supports Theory 4. It clarifies the problem areas mentioned in section 4.2 ( p. 168) and assists in meeting the objective of the research.

## **5.29 CONCLUSION**

This chapter contains the research findings. The results of the qualitative research are followed by those of the quantitative research. The quantitative results are based on statistical calculations of the consumer survey. These results are supplemented by tables and graphical representations. The data generated by the consumer survey have been used to test the hypotheses and subsequently to build theories. The findings of the consumer survey and the

theories that have been developed have been discussed in light of the literature review, the models that have been reviewed in chapter 3, the integrated model that has been developed and the discussions of the focus groups. The results of the research, the contribution of the focus groups and the integrated model have been used to construct a model of consumer behaviour with respect to domestic water in Mauritius. Chapter 6 is devoted to this aspect of the research.



## **CHAPTER 6**

### **NEW MODEL OF CONSUMER BEHAVIOUR OF DOMESTIC WATER CONSUMERS IN MAURITIUS**

#### **6.1 INTRODUCTION**

The previous chapter has given the conclusions of the consumer survey which was carried out in the context of this research. It also contains the results of the statistical tests of the hypotheses, which have led to the formulation of theories. This chapter flows from the previous one and is devoted to the development of the model of consumer behaviour in respect of consumption of domestic water in Mauritius. This model is referred to as 'the new model'. In same manner, the Nicosia model, the Howard and Sheth model, the Engel-Blackwell model and the Engel-Blackwell-Miniard model are termed as the 'four models' when collectively referred to.

The new model of consumer behaviour of domestic water consumers in Mauritius is in figure 6.1 at the end of this chapter.

#### **6.2 METHODOLOGY FOR CONSTRUCTING THE NEW MODEL**

The following have contributed to the development of the new model:-

- Tests of the hypotheses.
- Qualitative research, that is the discussion of focus groups
- The consumer survey carried out within the context of the research.
- The literature review
- The consumer behaviour models that have been reviewed, namely, the Nicosia model, the Howard and Sheth model, the Engel-Blackwell model and the Engel-Blackwell-Miniard model,
- The integrated model of consumer behaviour in figure 3.7 ( p. 166) has been constructed based on the common aspects of the models that have been literature reviewed in chapter 3. This integrated

model serves as a template against which the new model has been analysed and discussed.

The methodology used for constructing the new model has been :-

- To establish the relevant variables from the hypothesis testing
- To establish the relevant information from the interview of the focus group
- To use information from the consumer survey. These information are explained while constructing the new model.
- To compare the integrated model with the new model at each stage of the model construction.

The new model is depicted in figure 6.1 at the end of this chapter.

### 6.2.1 Variables from Hypothesis Testing

The hypotheses are contained in pages 196 to 204. The variables from the testing of the hypotheses are in table 6.1. The first row of the table refers to the specific hypothesis. The variables are given in the columns. The significant variables are indicated by "YES", those not significant by "NO" and those not contained in the hypothesis and therefore not applicable are blank..

**Table 6.1 – variables in hypothesis testing**

<i>Hypothesis/ Variables</i>	<i>HO1</i>	<i>HO2</i>	<i>HO3</i>	<i>HO4</i>	<i>HO5</i>	<i>HO6</i>	<i>HO7</i>	<i>HO8</i>	<i>HO9</i>	<i>HO10</i>
<i>Ethnic Group</i>	NO	NO	NO	NO	YES	YES	NO	YES	NO	NO
<i>Occupational Group</i>	NO	NO	NO	NO	NO	YES	YES	YES	NO	NO
<i>Urban/Rural Region</i>	YES	NO	YES	YES	NO	YES	YES	NO	NO	YES
<i>Age</i>	NO			NO	NO	NO	NO	NO		NO
<i>Level of Education</i>	YES			NO	YES	NO	NO	YES		NO
<i>Size of family</i>		YES								
<i>Price</i>		YES								

Legend:    Yes    :    Significant variable  
               No    :    Insignificant Variable  
               Blank :    Not Applicable

### 6.2.2 Information from Interview of Focus Groups

The information revealed by the focus groups are on pages 215 - 223. These information are in table 6.2.

**Table 6.2 – Variables of the focus groups interview and the new model.**

Question no. of survey Appendix E	Description
1	Water supply in urban and rural areas
4	Cost of a water connection
5	Price of domestic water
6	Knowledge about CWA
7	Drinking quality of water
10	Opinion on CWA workers
11	Customer care
14	Efficiency of CWA

### 6.2.3 Information from the Consumer Survey.

The consumer survey has allowed the collection of a variety of information related to the domestic water consumer in Mauritius, to the supplier of water, to the water supplied and generally to the management of water in the country. The relevant information used from the consumer survey are indicated and explained as the construction of the new model progresses.

### **6.3 THE MAIN COMPONENTS OF THE NEW MODEL**

As explained in pages 162 to 165, the integrated model in figure 3.7 (p. 166) is based on the common elements of the four models. The major components of the integrated model are :-

- Input
- Information processing
- Decision process
- Decision variables

For constructing the new model, the same major components of the integrated model are adopted, namely, input, information processing, decision process and decision variables. For this purpose, the elements are firstly those established by the testing of the hypotheses, secondly, those revealed by the consumer survey, thirdly those information emanating from the interview of the focus groups and lastly an informal interview of senior meter reading cadres of the CWA. It is worth noting that the survey questionnaire brings about a variety of information. These information are relevant to the management of the water sector in Mauritius. Relevant data from the survey is used for constructing the new model. The next step is to explain the main components of the new model.

### **6.4 INPUT**

It is recalled that the input in the four models and in the integrated model emanate from sources external to the consumer. The input variables in the new model are revealed by the survey. The relevant questions of the survey are shown in table 6.3. The first column refers to the question of the survey, the second column gives a short description of the information sought and the third column gives an indication of the variable. These are subsequently explained.

**Table 6.3 - Input of the new model**

<b>Question no. of survey</b>	<b>Description</b>	<b>Variables</b>
2.1	Adverse relationship with neighbour	Social Situational
2.2	New house ownership	Social
2.3	Desire to be like others	Social
2.4	Family and friends	Social
3.1	Knowledge about CWA	Firm's attributes, Message exposure
3.4	Mass media	Firm's attributes Message exposure

Replies to the question referred to in table 6.3 are detailed in pages 237 to 241. 24.5% of the respondents had no water connection of their own and depended on their neighbour for water (Q2.1). Their relationship with their neighbour had been deteriorating. This acted as a stimulus which prompted them towards problem recognition. This input variable is considered to be social in nature. At the same time, this deteriorating relationship with neighbour created a situation which acted as a stimulus and may therefore be also classified as social. 76.4% of the respondents felt the problem and the need for a water connection when they became owners of their new houses (Q2.2). This input variable emanates from the social environment of the respondents and is therefore qualified as social. 18.6% of the respondents were motivated by the wish to be like others and consequently applied for a water connection (Q2.3). They desired to improve their social status. This input variable can thus be classified as social. 9.1% of the respondents were requested by family and friends to have a water connection of their own. Family and friends being social groups, this input variable is social in nature.

Question 3.1 revealed that 87.3% of the respondents already knew that CWA was responsible for the supply of water in Mauritius and 11.4% of them had enquired about water connection from the CWA (table 5.10 p. 240). In other words, 98.7% of the respondents knew that the CWA had to do with water supply

in the country. Also 0.9% of the respondents had come to know about CWA through the mass media (Q.3.4). This was by way of communiqués of the CWA in the press, on the television and on the radio. These replies indicate that the CWA does undertake communication exercises whereby the Mauritian public comes to know about it. In addition, the focus groups expressed the opinion that the CWA was successful in bringing its messages to the Mauritian public (p. 218). Some of its techniques employed according to them were communiqués in the press, on the radio and television, posters and pamphlets, talks, conferences, events like exhibitions, open days and inauguration of projects. These messages which emanate from the CWA not only encompass the CWA, but also the water provided by it.

The communication activities undertaken by the CWA clearly establish its responsibility as a service provider and as the supplier of water in Mauritius. However, as regards water, it is worth noting that water as an item of consumption is not like the products available on the market. The consumer is bound to accept the water as offered to him and the price as set by the supplier. However, water has got significant and symbolic meanings which react on the consumer's memory. The significant meaning refers to the importance of water in one's life, and for health and hygiene. The symbolic meaning of water is what the CWA transmits in that respect to the consumer and this includes the importance of water, how to use it and how to preserve the water resources. On the other hand, the deteriorating relationship with neighbour is social in nature and is considered as a social and a situational input. The state of the respondent characterised by the fact that he did not have a water connection at his place is a consequence of situational factors.

#### **6.4.1 Input variables in New Model and in the Integrated Model**

The input variables in the new model and in the integrated model are explained in the preceding paragraph. These input variables are reproduced in table 6.4 for comparison purpose.

**Table 6.4 Inputs in the integrated and in the new models**

<b>Component</b>	<b>Integrated Model Variables</b>	<b>New Model Variables</b>
Input	<ul style="list-style-type: none"> <li>• Firm's attributes</li> <li>• Product attributes</li> <li>• Social environment</li> </ul>	<ul style="list-style-type: none"> <li>• Supplier's attributes</li> <li>• Product attributes</li> <li>• Social factors : family, friends, neighbours</li> <li>• Situational factors</li> </ul>

The input variables for the new model are :-

Component : Input

Variables : Supplier's attributes  
: Product attributes  
: Social factors  
: Situational factors

The component and the variables are depicted in the new model ( fig. 6.1 p. 424). The effects of the variables are that they create a stimulus on the consumer's memory. For example, the supplier exposes itself to the consumer through messages. The product attributes, that is the attributes of water and its importance to man again serve as a stimulus on the consumer's memory. Finally, the social and the situational inputs again serve as an input stimulus. These factors, are the requests of family and friends, and the deteriorating relationship with the neighbour. These variables are shown in the new model as social and situational factors with which the consumer is confronted

## **6.5 INFORMATION PROCESSING AND THE NEW MODEL**

Like in the integrated model, the new model perceives the consumer at the input stage to have no prior relationship with the stimuli emanating from the firm and from the external environment. At the information processing stage, the consumer is exposed to the external messages.

In the new model, the inputs act as stimuli on the consumer's memory which lead him to process the information emanating from the inputs. The consequences of the input stimuli are evidenced by the replies to question 3 of the survey whereby the respondents replied about how they proceeded ahead to solve their problem. Moreover, the focus groups were in one way or other aware that the CWA was responsible for water supply in the country. These are shown in table 6.5.

**Table 6.5 - Information processing and the new model**

<b>Question no. of survey</b>	<b>Description</b>	<b>Variables</b>
3.1	Knowledge about supplier	Exposure Message
3.2	Enquiry from supplier	Exposure Message Attention Comprehension Yielding Acceptance Retention
3.3	Family and friends	Family Friends Attention Yielding Acceptance Retention
Focus Group Question 6	Knowledge about CWA	Exposure Message

In this table, the inputs retain the attention of the consumer. This information processing leads him to comprehend that he requires a water connection and he is led to accept this fact. The other consequence is that the consumer may yield, that is, reject the input stimuli. The information processing results in the consumer retaining these information in his memory. Information processing reacts on the consumer and results in a problem being recognised. This problem is due to lack of a water connection. As is seen from the new model, problem



recognition is the first variable in the decision process.

It is also appropriate to observe that the information processing stage is similar to the learning constructs which are clearly mentioned in the Howard and Sheth model. In the Nicosia model, message exposure is mentioned. The same idea is conveyed by marketer-dominated stimuli in the Engel-Blackwell model and in the Engel-Blackwell-Miniard model. In the integrated model, information processing includes exposure, attention, comprehension, yielding/acceptance and retention. The consumer learns from the messages emanating from the supplier, from the attributes of the products contained in the messages from the supplier, from the social environment and from the situation he finds himself in.

To summarise, the information processing variables in the integrated model (p. 166) and in the new model are reproduced in table 6.6.

**Table 6.6 Information Processing**

<b>Component</b>	<b>Integrated Model Variables</b>	<b>New Model Variables</b>
Information processing	<ul style="list-style-type: none"> <li>• Exposure</li> <li>• Attention</li> <li>• Comprehension</li> <li>• Yielding/acceptance</li> <li>• Retention</li> </ul>	<ul style="list-style-type: none"> <li>• Exposure and message</li> <li>• Attention</li> <li>• Comprehension</li> <li>• Yielding/acceptance</li> <li>• Family, friends,</li> <li>• Retention</li> </ul>

The variables in the integrated and in the new models are similar to some extent only. Exposure is applicable to both models. In the integrated model, exposure is in relation to the firm and to all its products and services. In the new model, exposure is specifically related to water but has a wide coverage in that it includes all messages emanating from the supplier. Comprehension and yielding/acceptance are applicable to both models. However, in the case of the new model, yielding/acceptance is in relation to a water connection only. Family and friends have a social role in the integrated model. In the new model, the

social groups play an important role. Both models make mention of retention. In the integrated model, retention refers to several products from which the consumer may decide to choose; while in the integrated model, retention applies to a water connection only.

## 6.6 THE DECISION VARIABLES

The next step in the construction of the new model is the establishment of the decision variables. The relevant information revealed by the consumer survey and those variables borrowed from the theories that have been developed and from the discussions of the focus groups are summarised in table 6.7. The first column of this table shows the question number of the consumer survey and the second column gives a short description of this question. The third column gives an indication of the decision variable.

**Table 6.7 Decision Variables and the New Model**

<b>Question no. Of survey</b>	<b>Description</b>	<b>Variable</b>
12.1	Personal obligation and affordability	Individual Economic
12.2	Personal obligation and outside funding	Individual Economic
12.3	Family and friends	Social
12.4	Desire to be like others	Social
Theory 1	Consumer's involvement in decision-making	Urban/rural region
Focus Groups Question 2	A water connection for each home	Individual Social

From information contained in table 6.7, the decision variables can be grouped into individual, social, economic and situational variables. These are explained in the succeeding paragraphs.

### **6.6.1 Individual Variables**

Question 12 (table 5.28 p. 269) of the consumer survey reveals that 85.0% of the respondents were obliged to have their water connection because of personal obligation and they had the money to pay the installation cost. Another 13.2% of the respondents were also obliged to have their own water supplies and did not have the money to pay the installation costs (Q12.2). The personal obligations are revealed by question 2 (table 5.8 p. 233). These obligations include absence of water connection at one's place, and ownership of new house. Consequently the respondent felt obliged to have a water connection to provide for the needs of his family.

Desire for status is another individual variable which prompted the respondent in his decision-making. This aspect is revealed by question 2.4 ( table 5.8 p. 233). The replies to this question reveal that 18.6% of the respondents had applied for a water connection in order to be like others.

The focus group favoured the idea of a water connection for each home based on the idea that water is essential for individual development (section 5.2.2 p. 216).

### **6.6.2 Economic variables**

The economic variables which assisted the respondent in his decision-making is affordability. 85.0% of the respondents had the money; while 13.2% of them borrowed money to pay the connection costs (table 5.28, p. 269).

### **6.6.3 Income variable**

Level of income is another variable which allows consumers to become independent as regards their domestic water supply. This opinion was expressed by the focus group (section 5.2.9 p. 219). The level of income at the same time determines the purchasing power of the individual.

#### **6.6.4 Social variable**

The neighbours are among the social variables which can be considered as prompting the respondents in their decision. 24.5% of the respondents could not continue sharing the water supplies of their neighbour as their relationship with the latter had deteriorated. (table 5.8 p. 233).

Family and friends constitute other social groups which influenced the respondents in their decision-making. In 15.5 % of the cases, the respondents had taken the advice of their family and friends before coming to a decision (table 5.8 p. 233).

Desire for social status can also be viewed as a social element which acted as a decision variable. 18.65% of the respondents fall in this category (table 5.8 p. 233).

Ownership of a new house is both an individual and social factor in the local context. 76.4% of the respondents had applied for a water connection because they had become owners of their new houses (Q2.2, table5.8, p. 233).

A water connection for each home as desired by the focus groups make the consumer self-dependent for the water supply and can be equally considered as a social decision variable.

#### **6.6.5 Situational variables**

Relationship with neighbour can equally be viewed as a situational element influencing decision. The situation was such that 24.5% of the respondents could no longer rely on their neighbour for their water demand. The situations in which the respondents found themselves acted as motivators in their decision-making as revealed by the survey (Q 12, table 5.28, p. 269). 98.2%

of the respondents were in such a situation that they were obliged to have a water connection. Out of this percentage, 85.0% had the money and 13.2% did not. Thus finance is considered as a decision variable as well.

Finally, 76.4% of the respondents had become owners of their new houses and had consequently applied for a water connection (Q 2.1, table 5.8 p. 233). The situation for these respondents had changed. This situational element is considered as a decision variable.

#### **6.6.6 Motive and Intention**

The motive and intention of the respondent in finally deciding to have a water connection is seen from table 5.28 (Q12, p. 269). It comes out from this table that the motive of the respondents in applying for a water connection was to become self-reliant as regards their water requirements to satisfy their water-related needs. This motive finally resulted in the intention in them to decide and acquire a water connection. Consequently, the motive and intention to have a water connection equally act as the decision variables .

#### **6.6.7 Urban/rural regions**

The testing of the hypothesis and the development of theory 1 establish the urban/rural regions as one of the variables to which the decision-making process of the consumer to acquire a domestic water supply is related ( section 5.28.1, p. 346). The urban/rural region is thus considered as a decision-variable. The focus groups had opined that water supply in urban regions was better than that in many rural areas (section 5.2.1 p. 215). Finally, according to theory 1, the consumer's involvement in the decision-making is related to urban/rural regions.

### 6.6.8 Level of education

Theory 1 further sustains that the decision-making process of the consumer to acquire a domestic water supply is related to his level of education (section 5.28.1, p. 346). The level of education is thus considered as a decision variable.

Based on the preceding paragraphs, the decision variables influencing the decision of the potential domestic water subscriber in Mauritius are summarised in table 6.8. For comparison purposes, the decision variables in the integrated model are also given in the table.

**Table 6.8 Inputs - Decision variables**

Component	Variables in Integrated Model	Variables in New Model
Decision variables	<ul style="list-style-type: none"> <li>• INDIVIDUAL CHARACTERISTICS</li> <li>• CULTURAL/SOCIAL</li> <li>• SITUATIONAL</li> <li>• YIELDING/</li> <li>• ACCEPTANCE</li> <li>• RETENTION</li> </ul>	<ul style="list-style-type: none"> <li>• INDIVIDUAL</li> <li>• Lack of water connection</li> <li>• Personal obligation</li> <li>• Status</li> <li>• House ownership</li> <li>• Education</li> <li>• ECONOMIC</li> <li>• Affordability</li> <li>• Income</li> <li>• SOCIAL</li> <li>• Neighbours</li> <li>• Family, friends</li> <li>• Status</li> <li>• House ownership</li> <li>• SITUATIONAL</li> <li>• Neighbours</li> <li>• House ownership</li> <li>• Finance</li> <li>• URBAN/RURAL REGIONS</li> </ul>

The decision variables in the new model and in the integrated model are commented upon in next section.

### **6.6.9 Decision Variables In The New Model And In Integrated Model**

The decision variables in the integrated model have been explained in section 3.7.4 (p. 152); while those of the new model are explained in section 6.8 (p. 382). It is observed that the decision variables in the integrated model are in relation to any purchase; while those in the new model refer specifically to the acquisition of a domestic water connection. The integrated model makes mention of individual characteristics. These characteristics generally refer to factors like, motives, values, life-styles, personality in Engel-Blackwell model and Engel-Blackwell-Miniard model (pp. 121-128). In the integrated model, the individual characteristics do not imply an obligation on the consumer, whereas in the new model, this obligation which is due to the absence of a water connection, comes out very clearly. In the integrated model, individual characteristics also imply personality. In the new model, the domestic water consumer is desirous of improving his status and with this his personality. House ownership does not appear in the integrated model; while it is one of the main decision variables in the new model. The education of the individual is shown as a decision variable in the new model; whereas in the new model, it is implied as an individual characteristic.

The economic decision variables are not specifically mentioned; but are certainly implied in the integrated model, neither do they in the four models that have been reviewed in Chapter 3. In the new model, the economic decision variable characterised by affordability which depends on income is an important element which influences the decision of the domestic water consumer in Mauritius.

In the integrated model, the cultural influences in the form of social variables exist as a decision variable. In the new model, culture does not play any role in the acquisition of a domestic water connection in Mauritius. This fact is sustained in Theory 1 (section 5.28.1 p. 346) and by the focus groups ( section 5.2.8 p. 218).

The social elements are present as decision variables in both the integrated and in the new models. In the integrated model, these elements are shown as culture, reference groups and family. In the new model, the social elements are neighbours, family and friends.

Situational factors are shown to influence the behaviour of the consumer in both the integrated and in the new models. In the integrated model, the situational factors imply the actual state of the individual and any expected and unexpected future happening directly related to him and to his family. In the new model, the financial situation of the consumer, his relationship with his neighbour and his actual state of being a new house owner constitute the situational factors which influence his decision.

This section has outlined the decision variables which influence the decision of the consumer in the new model. The next section deals with the decision-making process of the consumer with respect to domestic water in Mauritius.

## **6.7 DECISION-MAKING PROCESS**

The decision-making process covers both the consumption and post-consumption activities of the consumer. In the new model as in the integrated model, the inputs and the decision variables are processed in the memory of the consumer, which lead to the decision-making process. This process constitutes another major component of the new model.

The variables in the decision-making process of the new model revealed by the theories that have been developed, by the interview of the focus groups and by the consumer survey are mentioned in table below. These are subsequently commented upon. The first column of the table refers to the source of the information. The second column gives a description of the question contained in the questionnaire. The third column indicates the variables.



**Table 6.9 Decision-making process variables and the new model**

Question no. of survey	Description	Variables
2	Reasons for applying for a water supply	Problem recognition Beliefs
3.1	Knowledge about CWA	Internal search
3.2	Enquiry from CWA	External search Attention
3.3	Enquiry from family and friends	External search
3.4	Mass media	External search
4	Information search	Complexity of information search
6	Price of water connection	Evaluation
7	Complexity of decision whether to go ahead for a water connection	Evaluation
8	Factors for and against acquisition of a water connection	Evaluation
9		
10		
12	Reasons for acquiring a water supply	Decision
14	Confidence	Belief, attitude, intention
30	Storage of water	Storage
31		
32	consumption	Consumption
Theory 2	Consumption related	Size of family Price
Focus Groups Question 9	Factors influencing consumption	Consumption

The decision-making process variables in the model and in the new model are indicated in table 6.10 for comparison purposes.

**Table 6.10 Decision-making process**

<b>Component</b>	<b>Variables in Integrated Model</b>	<b>Variables in New Model</b>
Decision Making process	<ul style="list-style-type: none"> <li>• Problem recognition</li> <li>• Information search</li> <li>• Internal</li> <li>• Alternative evaluation</li> <li>• Belief</li> <li>• Attitude</li> <li>• Intention</li> <li>• Choice</li> <li>• Purchase</li> <li>• Outcomes</li> <li>• Satisfaction</li> <li>• Dissatisfaction</li> <li>• Feedback</li> </ul>	<ul style="list-style-type: none"> <li>• Problem recognition</li> <li>• Information search</li> <li>• Internal</li> <li>• Information search</li> <li>• External</li> <li>• Evaluation</li> <li>• Belief</li> <li>• Attitude</li> <li>• Intention</li> <li>• Acquisition</li> <li>• Consumption</li> <li>• Outcomes</li> <li>• Satisfaction</li> <li>• Dissatisfaction</li> <li>• Feedback</li> </ul>

These decision process variables are explained in the succeeding paragraphs.

### **6.7.1 Problem Recognition**

Problem recognition is present in both the integrated model and in the new model. It is apparent in the Nicosia model and in the Howard and Sheth model. It is specifically mentioned in the Engel-Blackwell model and in the Engel-Blackwell-Miniard model. In the new model, the problem recognition is due to the lack of a domestic connection. The need for a water connection in this model is created by the memory as a result of the reaction of the inputs thereupon. Problem recognition is explained in section 2.16.1(p. 79) of the literature review. Problem recognition is an awareness of the need to change the existing state to conform to the desired state' (Cant *et al*, 2002:120) (section 2.16.1 p. 79). The consumer's decision starts when the consumer undergoes a consumption problem that needs to be followed up (Hoyer & MacInnis, 2001:199) ( section 2.16.1 p. 79). Problem recognition is the first stage in decision-making. Cant *et al*, (2002:74) define customer decision-making as ' a cognition process that consists of those mental activities that determine what activities are undertaken to remove

a tension state created by a need' (section 2.16.1 p. 79). Question 2 of the consumer survey equally reveals the problem recognition by the individual. The cause for the problem recognition is contained in question 2 (table 5.8 p. 233). These causes include adverse relationship of the individual with his neighbour, new ownership of house, affordability, wish to be like others and requests from family and friends.

According to Hawkins *et al* (2002:608), an individual's desire to solve a recognised problem depends on the magnitude of the discrepancy between the desired and the actual states. It also depends on the magnitude of the problem. Consumer problems can be active or inactive. According to the same authors, an active problem is one of which the consumer is or will be aware of in the normal course of events; while an inactive problem is one of which the consumer is not aware (section 2.16.1 p. 79). Since the cause of the problem is the absence of a domestic water connection and difficulty to procure water, which is a vital commodity, the problem experienced by the consumer can be viewed to be high in magnitude and to be an active problem.

Problem recognition leads the consumer to search information with a view to coming to a conclusion. This aspect is the subject of next section.

### **6.7.2 Information Search**

Problem recognition by the consumer requiring some action leads him towards information search which would assist him in decision-making (section 2.16.2 p. 81). Search for information takes place both in the integrated model and in the new model as well as in the four models reviewed in chapter 3. Information by itself is the knowledge about some fact or circumstance. Information search refers to mental or physical information searching and processing which will ultimately lead towards decision-making (Loudon & Bitta, 1993:504) (section 2.16.2 p. 81). Cant *et al* (2002:178) describe consumer search ' as the mental and physical activities undertaken by consumers to obtain information on

identified problems'. Information search can be at pre-purchase stage or ongoing. It can be internal or external. It can be by word of mouth or from mass media. In the new model, the consumer undertakes internal and external information search. In this context, internal information search refers to the consumer's memory; while the external search refers to the CWA and to the consumer's individual environment.

Search for information by the domestic water consumer is revealed by questions 3 and 4 of the survey (tables 5.10, 5.11 pp. 240, 242). Question 3.1 refers to internal information search. 192 (87.3%) of the respondents already knew that the CWA was responsible for water supply in Mauritius (Q3.1). The external source of information is revealed by questions 3.2, 3.3 and 3.4. 25 (11.4%) of the respondents sought the relevant information from the CWA (Q.3.2), 11 (5%) of the respondents sought the required information from family and friends (Q3.3) and 2 (0.9%) learned from the mass media where to apply for a water supply (Q3.4). On the other hand, question 4 establishes that for 213 (96.8%) of the respondents' information search was easy.

Consumers seek information through word of mouth communication, from sales people, from mass media communication and from consumer reports (Schiffman & Kanuk, 1996:563). Sources of information search can be grouped into three major areas, namely, marketer-dominated sources, consumer sources and neutral sources (Loudon & Bitta, 1993:507) (section 2.16.2 p. 81). The marketer-dominated sources are the sales people and packaging, for example. Consumer sources include interpersonal communication. The neutral sources refer to Government reports and independent agencies. In the quest for information on water supply in Mauritius, the consumer makes use of all the three sources. This aspect is seen in replies to question 3 of the survey (section 5.7, table 5.10 p. 240. Information sought and emanating from the CWA constitute marketer-dominated and neutral sources (Q.3.1 and 3.2). The CWA is a para-statal body operating under the aegis of the Government. The mass-media

(Q.3.4) equally constitute a neutral source of information. The consumer's source of information are family and friends who also constitute the social groups. (Q.3.3).

Factors that are likely to affect information search directly or indirectly are market conditions, example, price, style, appearance; buying strategies of consumer, for example, brand preference; individual factors, for example, confidence, beliefs; situational factors, for example, urgency of need. (Loudon & Bitta, 1993:508). Of all these factors, very few are relevant to the consumer in case of domestic water in Mauritius (section 2.16.2 p. 81). Except the price which the consumer needs to know, the market conditions really do not matter as the CWA is the sole supplier of water in Mauritius. The consumer has no brand loyalty as water is unique and without substitute. Individual factors are applicable to some extent only as the consumer has no alternative as regards the commodity and the supplier; but still needs adequate information whether to acquire a water connection or not. However, the urgency of need is relevant to the consumer as it determines the time to be taken for information search and for decision-making.

'One of the main challenges facing marketing is to present consumers with information on which to base their decisions', Cant *et al* (2001:179). As far as the CWA is concerned, 95.4% of the respondents declared that they were well received by the CWA employees when they went to make application for a water supply (Q.5, table 5.15, p. 248). This also implies that they were satisfied with information provided to them.

### **6.7.3 Evaluation Of Information**

Evaluation of information is shown as evaluation in the integrated model and in the new model. While searching for information, the consumer is also engaged in evaluating them. These processes allow the consumer to establish alternative solutions and ultimately come to a decision (Loudon & Bitta,

1993:513) (section 2.16.3 p. 83). According to Cant *et al* (2002:181), evaluation of alternatives is the act of identifying alternative solutions to a problem and assessing the relative merits and demerits of each. In the area under study, alternative to the product, that is to water, does not exist, neither do substitutes. One can but refer to alternative sources of water. At this stage, the Mauritian consumer is faced with two situations, namely whether to apply for a water connection and whether to look for alternative sources of water. Both aspects are established by the survey. Replies to question 7 show that 202 (91.8%) of the respondents found it easy to decide whether to apply for a water supply. (section 5.10.1, table 5.20 p. 256). Such application has to be made to the CWA on the prescribed application form (Government Notice No. 122 of 1992).

After making application for a water connection the consumer is, according to what actually takes place, prompted to undertake further evaluation. He has to consider the price of the installation of the supply. This and other aspects in favour of or against the consumer in moving ahead to fulfill his need are revealed by the survey. Question 6 of the survey shows that 97 (44.1%) of the respondents found the installation cost of a water supply to be high, while 123 (55.9%) of them classified it from reasonable to low (section 5.9, table 5.16 p. 250).

Other impediments faced by the consumer are revealed by questions 8 and 9 of the survey (section 5.10.2, tables 5.24, 5.25 pp. 261,262). According to question 8, 32 (14.5%) of the respondents were discouraged at going ahead with their application for a water supply because they found the connection cost to be too expensive. Moreover, 10 (4.5%) of the respondents out of the 32(14.5%) faced objection from their neighbours to laying of pipes across their premises. On the other hand, replies to question 10 reveal the factors which facilitated the evaluation of the solutions to the problem. 94 (42.1%) of the respondents could afford to pay the connection costs, 153 (69.5%) found it better to have their own water connection and 41 (18.6%) desired to be like others status-wise. The

price/installation cost of a water connection lead to the evaluation of means by the consumer, which reveals the affordability or non-affordability of the latter to meet the installation costs of the water connection.

Literature survey reveals that the whole set of alternatives to the knowledge of a consumer can be divided into three subsets, namely, the evoked, the inert and the inept sets (Loudon & Bitta, 1993:518) (section 2.16.3 p. 84). The evoked set contains the few selected brands which are valued as positive by the consumer for purchase and consumption. The inert set contains alternatives from which the consumer perceives no benefit and are evaluated as neither positive nor negative. The inept set contains alternatives which have been rejected by the consumer because of adverse reports and experience. In the case of water, none of the three subsets of alternatives applies as water is without substitute and the consumer cannot forego its consumption. However, the general rule (section 2.16.3 p. 84) that the greater the urgency of need and the greater the significance of the product, the less is the evaluation process is very much true in respect of water because water is vital, of daily necessity and is without substitute.

The section that follows contains the beliefs, attitudes and intentions of the consumer in his initiative to resolve his problem.

#### **6.7.4 Beliefs, Attitude And Intention**

In the new model as in the integrated model, evaluation of information to come to a conclusion takes into consideration the beliefs, attitude and intention of the consumer which are equally indicated in the models. Generally speaking, belief in an object creates a positive attitude in that object which may lead to the intention to acquire it. Beliefs 'consist of the very large number of mental or verbal statements that reflect a person's particular knowledge and assessment of something (Loudon & Bitta, 1993:477) (section 2.12.5 p. 61). According to Loudon and Bitta (1993;423), an attitude is a feeling or an evaluation reaction to

an object, that is how positive or negative a person feels towards an object (section 2.12.5 p. 61). The definition from Allport (1989) views attitude to an object or class of object in a constantly favourable or unfavourable way (section 2.12.5 p. 61). Finally, attitude is viewed as 'an enduring organization of motivational, emotional, perceptual and cognitive process with respect to some aspect of the individual world' (section 2.12.5 p. 61). An assessment of the replies to question 2 of the survey as reported in section 5.6.1 (p. 233) above reveals that the attitude to secure a water connection is the consequence of experience and inner feeling undergone by the respondent. This belief and attitude is consistent among the respondents as supported by the replies to question 14 of the survey whereby only 4(1.8%) of the respondents would not care to advise consumers without a water supply to apply for one of their own (section 5.14, table 5.30 p. 275).

The individual's behaviour can also be viewed within the tricomponent attitude model, namely the cognitive component, the affective component and the conative component (section 2.14.1 p. 72). The cognitive component refers to the individual's knowledge or perception about an object. The affective component involves feelings and emotion about an object. Conative component refers to the likelihood that an individual would act or behave in a particular way with regard to an attitude-object (Schiffman & Kanuk, 1996:244). The conative component may not include the actual behaviour. The tricomponent model may apply to the potential subscriber of the CWA. His cognitive attitude is seen in his knowledge about the product, that is water, which he uses for his domestic needs. Also according to question 3 of the survey, 209(95.0%) of the respondents were already aware that the CWA is responsible for water supply in Mauritius (section 5.7, table 5.10 p. 240). The affective component is seen in the feelings and emotions undergone by the individual in the absence of a water connection which prompted him to apply for one (section 5.6.1, Q.2, table 5.8 p. 233). Finally, the conative component is seen in the fact that the intention to secure a water connection may not always materialise. One of reasons could be lack of financial



resources to pay the connection cost of the water supply.

Cialdini *et al* (2001:18) have expounded on human attitudes which enable to change human behaviour (section 2.15 p. 75). They put forward six basic psychological principles which influence consumer behaviour, namely, reciprocity, scarcity, authority, consistency, liking and consensus. The individual behaviour of the CWA potential subscriber may be viewed within the context of these principles. Reciprocity arises in situation where the individual is dependent on his neighbour for his water supply (section 5.6.1, Q.2, table 5.8 p. 233). Scarcity is due to absence of a water connection. People often look for expert authority for information and guidance (section 2.15.3 p. 77). In the case of water supply in Mauritius, this authority rests with the CWA which is the sole undertaker of water in the country (CWA Act no. 20 of 1971). It is a fact that the people in Mauritius turn to the CWA for information and guidance as regards water (section 5.7, Q.3, table 5.10 p. 240). Consistency of attitude towards the product is seen in the fact that water is unique, without substitute and vital for life and nourishment. Consensus often tends to cause satisfactory decisions by finding out consensus among similar groups (Cialdini *et al* 2001:8). Replies to question 2 establishes the reasons why individuals in Mauritius generally want to have a water connection. There is generally consensus on this issue among groups of respondents who chose the same reply. Also, 41(18.6%) of the respondents had declared that they wanted to be like others (section 5.6.1, Q.2, table 5.8 p. 233).

The evaluation of the problem in the new model does take into consideration the decision variables which are individual, economic, social, situational and urban/ rural regions. These variables also affect the belief and attitude of the consumer which ultimately consolidate his intention to acquire a water connection. This intention leads the consumer to actually acquire the water connection. The next section deals with this aspect.

### 6.7.5 The Acquisition Of A Water Connection In Mauritius

The decision of the consumer in the new model is indicated by acceptance/acquisition. In the integrated model, decision takes place as choice and as purchase. In this case, choice refers to the selection of a brand. In the case of the domestic water supply in Mauritius, the consumer has no choice as water is a commodity which is unique and without substitute. The intention of the consumer to have a water connection materialises with its acquisition. Wisniewski (1995:377) states that 'of the alternatives which have been generated and then evaluated, a choice must be made as to which is most preferable and feasible' (section 2.16.4 p. 85). Schiffman and Kanuk (1996:555) define decision as 'the selection of an action from two or more alternative choices,' (section 2.16.4 p. 85). Decision 'involves the mental process of selecting the most suitable alternative from a set of options that customer has generated', Cant *et al* (2002:182). The relevant questions of the survey which are related to the acquisition of a water connection are mentioned in table 6.11.

**Table 6.11- Acquisition of a water connection supply**

Question No. Of survey	Reasons to acquire a water supply	Variables
12.1	Personal obligation and availability of money	Acquisition
12.2	Personal obligation and loan	Acquisition
12.3	Advice of family and friends	Acquisition

Replies to question 12 of the survey relate to decision-making by the consumer to have a water supply (section 5.12, table 5.28 p. 269). The replies reveal the reasons which prompted the decision of the consumer. Question 12.1 shows that 187 (85%) of the respondents were obliged to have a water supply and had the money to pay the installation costs to the CWA. 29 (13.2%) of the

respondents were equally obliged to have a water supply but lacked the money. These respondents borrowed the money in order to pay the installation costs to the CWA (Q.12.2). 34 (15.5%) of the respondents took the advice of their family and friends before taking the decision (Q.12.3).

Money is one of the determining factors which enable the consumer to have a water connection. For the majority of the Mauritians, affordability to have a water connection is not a constraint. However, a small minority of 29 (13.2%) of the respondents took loans to acquire a water supply of their own. Inability to secure a loan leads the consumer to drop his application for a water connection. In this case, the consumer continues to share the water supply of his neighbour. The decision of the consumer is seen in the accept/choice by him.

Decision-making is of three types, namely, nominal, limited and extended decision-making (section 2.17 p. 89). Water is a commodity of daily use. However, the decision to have a water supply can range from routine, that is nominal and limited to extended type of decision-making. For 187 (85%) (table 5.28 p. 269) of the respondents, money required to have a water connection was not a constraint and the type of decision-making by them was of a routine nature. However, 29 (13.2%) of the respondents were in an obligation to have a water connection but did not have the money to pay for same. These respondents therefore had to contract a loan for the purpose. For them, decision-making was an extended one.

Cant *et al*, (2002:181) refer to Schiffman and Kanuk to explain that four types of individuals are involved in decision-making, namely, the economic individual, the passive individual, the emotional individual and the cognitive individual (section 2.16.3 p. 83). The economic individual takes calculated and rational decisions based on complete information. The passive individual is not knowledgeable and is influenced by the marketer. The emotional individual acts on personal and irrational needs. The cognitive individual takes decisions based on information from the environment, on social influences, needs, attitudes,

perceptions and experience. Based on replies of the respondents in respect of question 2 (section 5.8 p. 233) and question 12 (section 5.12 p. 269), the respondents' behaviour appear as that of the economic and cognitive individual.

In the context of consumer decision-making for water, reference is made to Foxall (1999) (section 2.18 p. 91). The view reported by Foxall is that consistency of human behaviour is maintained by its social and physical setting irrespective of the personal disposition of the individual. Foxall puts forward the theory that aspects of consumer behaviour can be predicted from two dimensions of situational influence. These are the consumer behaviour setting and the utilitarian and information reinforcement signalled by the setting as primed by the consumer's learning history. This theory adopts a different route to those of the cognitive consumer research in which the basis of consumer behaviour is sought in information processing by the individual. The view of Foxall is no less true with respect to domestic water consumers in Mauritius. The social and physical setting of Mauritius reveals that piped water is available to almost the whole country and that the tendency in the country is for every consumer to have a water connection. The utilitarian and information re-inforcement signalled by the setting as primed by the consumer's learning history takes into consideration his need for water and his ability to afford a water connection. Thus, in this context, uniformity and consistency emerges in consumer behaviour and in decision-making by domestic water consumers in Mauritius.

The formulation of theories has equally contributed to the development of the new model. According to Theory 1, the consumer's decision-making process to acquire a domestic water is related to the latter's residential area and to his level of education. These elements are shown in the new model as factors influencing the consumer's decision. The section which follows deals with consumption and storage of domestic water in Mauritius.

### 6.7.6 Consumption Of Domestic Water And Storage In Mauritius

Consumption and storage of domestic water in Mauritius are shown as one item in the new model. In the integrated model, storage is not specifically mentioned but is deemed to be contained in choice/purchase. In the local context, part of the domestic consumers store water before consuming it; while others use water directly from the tap without storing it. The relevant theory and the questions of the survey related to consumption and storage of water in Mauritius are mentioned in the table 6.12 that follows.

**Table 6.12 - Consumption and storage of domestic water**

Item	Description	Variable
Questions 30, 31 of survey	Storage consumption	Storage
Theory 2	Size of family Price of water	Size of family Price
Theory 3	Satisfaction of Water Related Needs	Urban/rural regions
Focus Groups Question 9	Consumption related	Consumption

An individual becomes a consumer of the CWA only when he receives a water connection on his premises, and settlement of the connection cost is a precondition of the CWA before the water supply is connected. Replies to question 12 reveal that all the respondents settled the connection costs, although a minority of 29 (13.2%) of them had to contract loans to do so (section 5.12, table 5.28 p. 269). They consequently got their water connections and thus became consumers of the CWA. The habit among most of the domestic consumers is to store water at their places. The reason for this is to cater for water cuts due to pipe bursts and repairs. Question 30 of the survey shows that 65% of the respondents stored water (section 5.24, table 5.67 p. 326).

According to question 32 of the survey, the average monthly consumption per respondent and his family was 20.4 m<sup>3</sup> and the average number of persons per family was 3.65 (Q.33) (section 5.25 p. 327 ).

The new model accordingly takes care of theory 2 and theory 3. According to theory 2, the consumption of domestic water in Mauritius is related to the size of the family and to the opinion on the price of water ( sections 5.28.2, 5.28.3, pp. 349, 352). According to theory 3, water related needs of domestic water consumers is related to urban/rural regions.

According to the focus groups, domestic consumption of water in Mauritius is influenced by factors like residential area, affordability, income, education, size of family and price (section 5.2.9 p. 219).

Consumption of water for domestic purposes includes illegal use of such water. Unethical and illicit behaviour of consumers has been lengthily dealt with in section 2.24 (pp. 107-111). As will be shown in succeeding paragraphs, illegal use of domestic water does exist in Mauritius.

Probing into the illicit behaviour of consumers, including domestic water consumers is a very sensitive area. Illegal use of water is an item of the new model. However, it does not exist in the integrated model. It is unlikely that respondents would be willing to give complete information on illegal water consumption during the course of a survey with the use of written and structured questionnaire. The respondents were therefore spared this embarrassment during the course of the consumer survey. The information contained in this section is from primary sources. The methodology used was to interview orally about thirty senior meter reading cadres of the CWA, who discharge both site works and office duties. Among their other duties, these officers were also responsible for detecting and reporting illegal use of water.

The under-mentioned opinions were expressed during the informal discussions:-

- Illegal use of water does exist in Mauritius. Its quantum and magnitude is difficult to and has not been assessed yet.
- Both domestic and non-domestic consumers pilfer water. Domestic consumers pilfer water to fulfill their water-related needs because of financial constraints or to reduce their expenditure. Non-domestic consumers are prompted to steal water through profit motives.
- People steal water when they are less likely to be detected, for example, after office hours and at night.
- People create situations for stealing water, for example, by tampering with the meter or by effecting by-passes before the meter.
- The CWA should intensify its anti-fraud activities.

CWA records show that as a result of a pilot project during a period of 19 months from December 1998 to June 2000, 277 cases of illegal use of water were detected. The monetary value of the volume of water illegally used amounted to 7.7 million MUR. Another crude fact to sustain the existence of illegal use of water is that in February 2005, Government decided to amend the CWA Act of 1971 to increase the sentence against illegal water users. The sentence which was a fine not exceeding 2000 MUR and an imprisonment not exceeding two years was increased by virtue of CWA (Amendment) Act 2005 to :-

- (i) a fine not exceeding 50,000 MUR and an imprisonment not exceeding two years for Domestic consumers.
- (ii) a fine not exceeding 200,000 MUR and an imprisonment not exceeding two years in any other case.

Moreover, in order to expedite action against illegal users of water, provision has been made in the CWA (Amendment) Act 2005 for CWA Officers to act as prosecutors.

The moral philosophies are generally categorical in two major types of philosophies, namely, those that are deontological and those that are teleological. This view comes from Hunt and Vittel (1992) as reported by Al

Khatib *et al* (2001). Deontology focuses on the specific behaviour of an individual; whereas teleology focuses on the consequences of the actions or behaviour (section 2.24.3 p. 110). According to Hunt and Vitell (1992), consumers in their ethical decision-making process carry out both deontological and teleological evaluations. In this context, it may be assumed that pilferers of water in Mauritius carry out both deontological and teleological evaluation in their decision-making. This is seen in the fact that on a practical level, such people wait for or create conditions before stealing water. For example, they would wait for darkness to set in. They would further evaluate the necessity for and benefits of stealing water. It is a commonly known fact that vegetable planters in the area of Carro Lalianne pilfer piped water at night for irrigation purposes. Such persons would steal water after taking into consideration their inherent behaviour and the possible consequences of their actions.

Al Khatib *et al* (2001) relies on Hunt and Chonko (1970) and on Forsyth (1980) to explain unethical consumer characteristics (section 2.24.4 p. 109). Al Khatib *et al* (2001) report Hunt and Chonko's view that Machiavellianism is one of the unethical consumer characteristics. Machiavellianism indicates an amoral, if not immoral, way of manipulating items to accomplish one's objectives. Al Khatib *et al* (2001) further rely on Forsyth's concepts of idealism/relativism to explain the characteristics of unethical persons (section 2.24.4 p. 110). Idealism is adherence to moral absolutes when making moral judgment. Idealism adopts the deontological approach. Relativism adopts the opposite view and is situated within the teleological perspective. Relativism is the degree to which an individual reflects universal moral rules when making ethical judgments or drawing conclusions about moral questions. Idealists/relativists are grouped into four ethical types, namely, situationists, absolutists, subjectivists and exceptionists. Situationists reject moral rules in order to achieve the best possible outcome in a situation. Absolutists believe that their actions are moral only if they yield positive results through conformity to moral rules. Subjectivists reject moral rules and back their moral judgment on personal feelings about their actions. Exceptionists



believe that if deception cannot be avoided, then it is allowable as long as safeguards are used. As far as domestic water pilferers and other pilferers are concerned they can be analysed within the idealism/relativism paradigm. Their action is illegal according to the CWA Act (Act No. 20 of 1971) and immoral according to universal moral rules. They are certainly not idealists and absolutists. The domestic water pilferers can be viewed as situationists, subjectivists and exceptionists. It has often been observed and reported that consumers whose water supplies have been disconnected for non-payment of water charges steal water. They find themselves in a situation where they are unable to settle their water bills and are unable to forego the use of water. Moreover, they find themselves in a relatively safe situation to steal water at night. They are therefore situationists. Some such people steal water because they cannot live without it, and are therefore viewed as subjectivists. Finally, these people cannot avoid deceiving the CWA in order to fulfill their water related needs. They therefore steal water and may be viewed as exceptionists. In like manner, those consumers who steal water in order to reduce their water charges may be viewed as situationists, subjectivists and exceptionists.

Pilferage of domestic water can further be analysed within the perspective of illegal goods and illicit purchase. According to Miller (1999), illicit goods are illegal goods freely chosen by the consumer; while an illicit purchase is one where the product sold and purchased was offered illegally (section 2.25 p. 112). In this context, the behaviour of domestic water consumers can be viewed as both illegal and illicit. Price, penalty and situations appear to be related to the decision to participate in criminal acts (Miller, 1999). Dillon (1989), Dodget *et al* (1996), Wee *et al* (1995), and Bloch *et al* (1993) have stressed price as the main motive for consumer misbehaviour. This aspect is true in the case of domestic water pilferers in Mauritius. From the internal reports of the Anti-Fraud Squad of the CWA, it is noted that water is used illegally from supplies which have been disconnected or from illegal by-passes before the water meter. In the first case, the domestic consumer is unable to meet the cost of water and in the second

case his motive is to reduce the expenditure on water charges.

Consumers tend to adopt unethical behaviour because of the cost/benefit it represents. This view is reported by Miller (1999) from Grossman and Shapiro (1988) and from Ehrlich (1980) (section 2.25 p. 112). This view can equally apply to domestic water pilferers in Mauritius. These people are able to afford a vital life sustaining commodity free of charge. The benefit to them is what they would have paid for the water so consumed.

Situational factors may affect illicit behaviour in consumers. According to Rindfleisch *et al*, (1997), as stated by Miller (1999) situational influences affect the decision to engage in unethical consumer behaviour. The view of Foxall (1990) as reported by Miller (1999) in that basically honest people act dishonestly when faced with temptation, perceived low risk of punishment, and the ability to rationalise their behaviour is worth mentioning. The situation in which the domestic water pilferer in Mauritius finds himself needs to be analysed. First, he cannot forego water as he needs it to live. This may according to him justify his behaviour. Second, he is unable to purchase this commodity. Third, he might forego his illegal act and reduce the risk of punishment. Thus the situations, needs, cost/benefit and perceived risks of punishment are the factors likely to contribute towards unethical and illicit behaviour of domestic water consumers in Mauritius. All the elements are accordingly depicted in the new model. Section 6.8 is the next and final stage of the new model. It deals with the outcomes of the consumption process.

## **6.8 OUTCOMES**

The outcomes of the consumption of domestic water in Mauritius constitute the post-consumption stage of the decision-making process in the new model

The outcomes of the domestic water consumption in Mauritius are shown

in the new model as satisfaction and dissatisfaction. As in the integrated model, these outcomes are followed by feedback. In order to explain the post consumption behaviour of the domestic water consumer in Mauritius in the new model, the post consumption stage is segmented into: -

- (a) supply of water and quality of service and product
- (b) price and water charges
- (c) complaints and complaints handling, and
- (d) feedback

The consumer survey and the theories that have been developed have contributed towards establishing the post-consumption behaviour of domestic water consumption in Mauritius. The relevant questions of the consumer survey and the theories along with a description of the elements revealed by them are summarised in table 6.13.

**Table 6.13 - Outcomes of domestic water consumption in Mauritius**

Description	Variable
Question no. of survey	
13	Time taken to install water supply
15	Water related needs satisfied/not satisfied
16	Satisfaction/dissatisfaction with volume of water supplied
5	Satisfaction/dissatisfaction with CWA employees
27	Helpfulness, courteousness and knowledgeability of CWA employees
18	Drinking quality of water
6	Installation cost of water supply
17	Domestic water tariff
23	Complainants

24	Causes of complaint
25	Complaints handling
26	Time taken to finalise complaints
28	Quantity of water supplied and quality of service
Theory 5	Drinking quality of water and its relatedness to ethnic group and to level of education
Theory 10	Quantity of water supplied and its relatedness to urban/rural areas
Focus Groups Question No.	
1	Water supply in urban/rural regions
4	Cost of a water connection
5	Opinion on price of domestic water
7	Drinking quality of water
10	Opinion on CWA workers
11	Customer care by CWA
12	Awareness of the Hot Line Service - Telephone Number 170
13	Wastage by CWA
14	Efficiency of the CWA

### 6.8.1 Supply Of Water And Quality Of Service And Product

Cronin *et al* (2001:193) refer to authors like Hallowen (1996), Fornett *et al* (1996) and Athanassopoulos (2000) to show the effect of quality, value and customer satisfaction on consumer behaviour. 'The service management literature argues that customer satisfaction is the result of a customer's perception of the value received .. where value equals perceived service quality relative to price .. ' Hallowel, (1996:29). 'The first determinant of overall customer

satisfaction is perceived quality.. the second determinant of overall customer satisfaction is perceived value..' Fornel *et al* ., (1996:9). 'Customer satisfaction is recognised as being highly associated with 'value' and ... is based, conceptually, on the amalgamation of service quality attributes as price ..' Athanassopoulos, (2000:192) (section 2.20 p. 94).

Sweeney (2001:203) quotes Albrecht (1992) who argues that 'the only thing that matters in the new world of quality is delivering customer value' (section 2.19 p. 92). The consumer survey tries to establish the quality of supply and service as perceived by the consumer.

According to Question 13 of the survey, 118(53.7%) of the respondents were satisfied with the time taken by the CWA to install the water supply; whereas 91(41.8%) were not satisfied therewith (section 5.13, table 5.29 p. 272).

On the other hand, according to question 15 of the survey (p. 277), 165(75%) of the respondents declared that their water related needs were satisfied with the supply of water to them; while 53(24.1%) of them expressed a different view. Moreover, according to question 16 of the survey (p. 278), 56(25.5%) of the respondents were not satisfied with the volume of water supplied to them. At the same time, 24(10.9%) of the respondents disagreed that the service provided by CWA was good (Q.28.2) (p. 319). Once again, non-availability of sufficient volume of water to meet the domestic needs of the consumer leaves the latter in a dissatisfied state. This constitutes another ground for complaint. In line with questions 1 (p. 215) and 14 (p. 220) of the discussion guide, the focus groups observed that water supply in rural regions was not as good as in urban areas.

The consumer survey delves into the quality of the CWA employees which constitutes a no less sensitive area. According to question 5 of the survey, 110(95.4%) of the respondents agreed that they were well treated by CWA employees when they went to apply for a water supply. Only 5(2.3%) of them

expressed a different view and believed they had ground to complain against CWA employees (section 5.8 p. 248).

Question 27 of the survey (section 5.22 pp. 313-318) establishes the courteousness, helpfulness and knowledgeability of CWA employees. 193(87.8%) of the respondents found them to be courteous, 174(79.1%) found them to be helpful and 172(78.1%) found them to be knowledgeable. These respondents were therefore satisfied with the CWA employees. However, 10(4.5%) of the respondents found the CWA employees to be uncourteous, 16(7.3%) found them to be unhelpful and 10(4.6%) found them to be unknowledgeable. These respondents were therefore dissatisfied. A similar picture emerges from the discussions of the focus groups. A minority of the members were dissatisfied with CWA workers; while the majority of them expressed a different view. (section 5.2.10 p.219).

The quality of a product is an important factor responsible for consumer behaviour. Satisfaction and dissatisfaction of the consumer depends to a large extent on the quality of the product. The drinking quality of domestic water in Mauritius is established by question 18 of the survey. 197(90.5%) of the respondents agreed that the drinking quality water in Mauritius was good and were therefore satisfied. However, 25(8.6%) of them were not satisfied. ( section 5.18, table 5.40 p. 291). Most of the members of the focus groups agreed that the drinking quality of water in Mauritius was good. Only a few of them expressed a different view (section 5.2.7 p. 218).

Satisfaction following consumption of a product is responsible for attitude formation in the product and in its provider. It creates belief in the consumer and the end result is consumer confidence. While attitude, inter alia, refers to how positive or negative a person feels about an object, beliefs consist of a very large number of verbal estimates that reflect a person's particular knowledge and assessment of something (section 2.12.5 p. 61). The satisfaction expressed by

respondents towards the water supply and service provided by the CWA would mean a positive attitude towards and belief in the service provider, in its supply and in its service. Likewise, an unsatisfactory supply and service would give rise to a negative attitude and belief.

According to theory 5, the drinking quality of water perceived as good by the domestic consumer in Mauritius is related to ethnic groups and to level of education (section 5.28.5 p. 356). The new model, accordingly, makes mention of these elements.

The opinions of the respondents are mentioned in the preceding paragraphs. In the light of these opinions, it can be argued in respect of water supply and service that favourable service quality perception leads to improved satisfaction and that positive value influences satisfaction. Such a definition on service quality has been expressed by Cronin *et al* (2000:1993) (section 2.20 p.94). Bagozzi's (1990) model suggests that satisfaction is preceded by more cognitively-oriented service quality and value evaluation (section 2.20 p. 94). Since the opinions of the respondents were expressed after consumption, it follows that this experience of satisfaction/dissatisfaction is in line with Bagozzi's view.

Divergent literature on quality, value and customer satisfaction makes mention of three models, (Cronin *et al*, 2001:1993). In the first model, value is suggested to lead directly to favourable outcomes. This is the case with domestic water consumers in Mauritius who experience quality supply and service. The second model defines customer satisfaction as the primary and direct link to outcome measures. In the case of domestic water supply and service in Mauritius, experience of the consumer, that is the outcome of his consumption determines his satisfaction or otherwise. According to the third model, the relationship between service quality and behavioural intentions is indirect (section 2.20 pp. 94,95). This third model too would stand justified in the case of domestic water supply and service in Mauritius. The quality of the supply and

service provided by CWA certainly does not determine directly the potential subscriber's intention to acquire a water connection. In this context, any relationship between the behavioural intention and CWA quality of service can but be indirect. However, this intention is directly linked to his unfulfilled need to have a water supply. Finally, the effects of quality, value and customer satisfaction with respect to domestic water supply and service can be said to be in line with the view of Cronin *et al* (2001:1993) on quality, value and customer satisfaction, namely, that service quality perceptions are important determinants of consumer satisfaction, that quality not only affects perceptions of value and satisfaction, but it also influences behaviour directly and indirectly.

Quality, value and customer satisfaction can be equally viewed within the context of the hysteresis model. Galloway (1995) makes mention that some models identify variables which would influence consumer behaviour in only one direction, for example, satisfactions and dissatisfactions (section 2.21 p. 96). Some other models assume that the effect of a change in a variable would be reversible thus influencing consumer behaviour in such directions. According to some still other models, certain threshold values have to be crossed before any effect would be apparent. This is termed as the qualifying criteria of Hill (1985) according to Galloway (1995). The service quality or order winning criterion is expected to behave according to the hysteresis model of Hill (section 2.21.2 p. 97). The two aspects of the service quality which indicate a much stronger relationship are the zone of tolerance and and satisfiers/dissatisfiers (Galloway, 1999). The survey of domestic consumers in Mauritius has tried to establish the satisfaction/dissatisfaction of the respondents. This aspect has been detailed in the preceding paragraphs. It suffices to remind that satisfaction/dissatisfaction are related to the areas of customer care, price, service, needs satisfaction, quality of product, CWA employees and complaints.

According to the hysteresis model, an order-winning criterion has a limited life. As such a criterion matures, the acceptable gap between the best and the



worst performance will reduce and the effort needed to close the gap will increase. Those left behind will fail (section 2.21.4 p. 99). In the case of water supply, the product life cycle does not depend on the order-winning criterion. The reason is that the CWA is the sole supplier of water in Mauritius and water is without substitute and is vital to life.

Section 2.22 (p. 100) emphasises lengthily on the importance of quality of service for customer satisfaction. Writers like Wellington (1995), Lovelock (1996), Reilly (1996) and Johnson (1997) have focused on quality customer service for customer satisfaction. Since the service business is a system, the service has to be measured against quality of output, quality of the elements of the service delivery sub-system and the quality of the process (Eiglier & Langeard, 1996). Quality is equally concerned with internal service within an organization. All these elements contribute to achieve total quality. As far as the water supply and service provided by the CWA are concerned, focus on provision of a total quality service would contribute very positively towards enhancing customer satisfaction. Consumer satisfaction or otherwise with the price of domestic water in Mauritius is dealt with in next section 6.8.2.

### **6.8.2 Price Of Domestic Water And Water Charges In Mauritius**

In the new model, price is represented by affordability which is considered by the consumer at the evaluation stage. In similar manner, in the integrated model, price is considered at the evaluation stage. The price of a product is to a large extent responsible for consumer behaviour towards a product and choice of that product. The choice and consumption of the product depends on the means, that is on money, available to procure it. The new model takes care of this aspect based on the results of the consumer survey. The perception of the domestic water consumer on the price of the water connection and on the price of domestic water is revealed by questions 6 and 17 respectively (sections 5.9, 5.16, tables 5.16, 5.36 pp. 250, 284). Replies to question 6 show that the

opinions of consumers on the installation cost for a water connection claimed by the CWA are not unanimous. 97(44.1%) of the respondents found the water connection cost as high, 112(50.9%) found it to be reasonable, 9(4.1%) found it to be quite low and 2(0.9%) found it to be low. In all, for 123(55.9%) of the respondents, the connection cost was acceptable. It is relevant to add that 29(13.2%) of the respondents were unable to meet the connection cost and had to contract loans for the purpose (Q.12.) (section 5.12, table 5.28 p. 269). On the other hand, the focus groups were divided in their opinion on the connection cost of a water supply (section 5.2.4 p. 217).

According to question 17 of the survey, 85(38.6%) of the respondents found the water tariff to be high, 123(55.3%) found it to be reasonable, 9(4.1%) found it to be quite low, and 3(1.4%) found it to be low (Q.17) (section 5.17, table 5.36 p. 284). In all 135(61.4%) of the respondents were satisfied with the domestic water tariff. The respondents who qualified the water tariff as high felt they had grounds to be dissatisfied. In this context, it is noted that 181(82%) of the respondents settled their water bills within the statutory delay of sixty days of their delivery (Q.34) (section 5.26 p. 328). These consumers were satisfied. The remaining 39(18%) of the respondents did not settle their water bills in time and ran the risk of having their water supply disconnected. Consequently, they experienced dissonance. According to discussions, some members of the focus group qualified the price of domestic water in Mauritius as reasonable while others found it as high (section 5.2.5 p. 217).

It is relevant to make observations on the perception of the domestic water consumer on the value and price of a domestic water connection and of domestic water. Sweeney (2001:203) reports from Harnett (1998) that value is seen in the satisfaction of people-based needs (section 2.19 p. 92). In this respect, 165(75%) of the respondents agreed that their water related needs were well satisfied with the supply of water to them (section 5.15, Q. 15, table 5.31 p. 277). The value of water supplied to the 51(29.1%) of the respondents was thus below their satisfaction. This non-satisfaction of people-based need may equally be

classified as a dissatisfier in accordance with the hysteresis model (section 2.21 p. 96). 97(44.7%) and 85(38.6%) of the respondents respectively found the price of water connection and the price of domestic water to be high. They therefore had cause for discontent. The price of these items may also be classified as dissatisfiers according to the hysteresis model.

The perception of the domestic water consumer in Mauritius on price may be further examined within the context of attitude and belief. Beliefs, attitude and intention form part of both the integrated model and of the new model. They are equally specified and implied in the four models that have been reviewed in chapter 3. Section 2.12.5 on page 61 gives three definitions of attitude. The first definition views attitude as how positive or negative a person feels about an object. The second definition views attitude towards an object in a consistently favourable or unfavourable way. The third definition views attitude as 'an enduring organization of motivational, emotional, perceptual and cognitive process with respect to some aspect of the individual world'. (Loudon and Bitta, (1993:423) (section 2.12.5 p. 61). The attitude of the consumer towards the price of a water connection and towards the price of domestic water can be situated within all the three definitions. The attitude of the domestic water consumer satisfies the first definition because the respondents have expressed their positive or negative feeling during the survey. The second definition is equally satisfied because the opinion on price expressed by the respondents is either favourable or unfavourable. The third definition is also satisfied because in the context of Mauritius, a consumer's attitude to price depends on a variety of factors which may include individual, social, economic, situational and family factors. Such factors may prompt the consumer to evaluate the motivational, emotional, perceptual and cognitive processes he may be experiencing.

Complaints constitute another area of the post-consumption behaviour of consumers. The next section is devoted to this aspect in respect of domestic water consumers in Mauritius.

### 6.8.3 Complaints And Complaints Handling

The new model makes mention of complaints. The integrated model and the models reviewed in chapter 3 do not specifically indicate complaints by the consumers. However, complaints may be deemed to be a consequence of dissatisfaction. According to Cant *et al* (1995), consumer complaints are very useful forms of consumer-initiated information that can assist in making strategic and tactical decisions. Complaints give dissatisfied consumers the opportunity to vent their unhappiness. Complaints reduce dissonance (section 2.23 p. 106). Kasouf *et al* (1995) reports the view of Allicke *et al* (1992) whereby negative words of mouth are motivated by the desire to get emotional release. Emotional release may be meant for seeking redress or warning to potential consumers. Moreover, complaining not only increases satisfaction but also influences actual purchasing behaviour (Nyer, 1999) (section 2.23 p. 107). The consumer survey establishes the complaining behaviour of domestic water consumers in Mauritius. This aspect accordingly contributes to the new model of consumer behaviour. According to question 23 of the survey, 51(23.2%) of the respondents had complained to the CWA (section 5.21.1, table 5.52 p. 305). Question 24 gives the causes of the complaints. Thus 16(7.3%) of the respondents complained of excessive water bills, 20(9.3%) of them experienced insufficient water supply, 4(1.8%) of them reported broken water pipe at their places, 10(4.5%) of them reported leakage on roads, 14(6.3%) of them felt that the water meter was defective and 7(3.2%) of them were not satisfied with the CWA employees (section 5.21.2, table 5.53 page 307).

The survey also establishes the result of the complaints according to the consumer. In all 30(13.7%) of the respondents, that is, 58.8% of the complainants agreed that their complaints were dealt with efficiently (Q. 25) (section 5.21.2, table 5.54 p. 310). These complainants became ultimately satisfied consumers. At the same time, 15(6.8%) of the respondents, that is (41.2%) of the complainants, stated that their complaints had not been dealt with efficiently. In other words, the CWA left 41.2% of the complainants dissatisfied in

spite of their complaints.

Information received from the CWA showed that complaints received from consumers during the month of March 2005 were as below :-

**Table 6.14 Complaints Received During March 2005**

Type of Complaint	No.of Complaints
Inefficient Supply	1537
Broken pipe on road	419
Broken pipe at consumer's place	2262
Leakage	102
Excessive bill	513
Meter defective	56
Others	427
Total	5316

**Source : Central Water Authority (March 2005)**

The consumer survey revealed that 23.1% of the respondents had complained to the CWA. This figure is realistic when compared to the figure in table 6.14 which when calculated over twelve months shows that 23.0% of all consumers had complained to the CWA. Feedback, which is the last stage of consumer behaviour, is dealt in next section.

#### **6.8.4 Feedback**

Feedback is an item contained in the new model, in the integrated model and in the four models that have been reviewed in chapter 3. The views of the different authors contained in this section are subsequently discussed in the light of the relevant findings of the research. Feedback completes the new model of consumer behaviour. It takes place towards the end of the post-consumption

stage. A purchase means expenditure to the consumer, but makes available to him a product which he expects will fulfill his need for it. The consumer is prompted to establish whether his decision to purchase the product was the right one (section 2.16.5 p. 86). Cant *et al* (2002 :182) explain that post-purchase behaviour 'involves a customer's evaluation of the performance of the product, in relation to the criteria, once it has been bought, that is, it is the consumer's perception of the outcome of the consumption process'. The performance of a product can be as expected, above expectation or below expectation (Schiffman & Kanuk, (1996:579). In the first case, the consumer adopts a neutral attitude. In the second case, he experiences a positive disconfirmation and satisfaction. In the third case, the result is negative disconfirmation and dissatisfaction.

Cant *et al* (2002 :182) further explain that post-purchase involves different forms of psychological processes that consumers experience when buying a product. According to them, post-purchase learning is one of such processes. They refer to Wilkie (1990) to explain post-purchase learning which 'means that after buying something, the customer discovers something about a product or service, stores this new knowledge in his long term memory, modifies relevant attitudes, and is ready for the next decision process with an improved base of knowledge'. Loudon and Bitta (1993 : 579) argue that satisfaction/dissatisfaction is not an emotion; it is the evaluation of an emotion. Cant *et al* (2002 :183) state that 'satisfaction occurs when the outcome and the conditions surrounding a product are matched with the customer's expectation. On the other hand, the consumers express dissatisfaction when the product does not match their expectation and fall short in significant ways. (section 2.16.5 pp. 86,87).

Satisfaction or dissatisfaction may affect the consumer's future information processing and decision-making. Satisfaction may result in more favourable post-purchase behaviour, and more purchase intentions. Dissatisfaction may bring about the opposite results (Loudon & Bitta, 1993:581) (section 2.16.5 p. 87). Apart from satisfaction or dissatisfaction with a product, writers in the field have

argued that the consumer may experience dissonance, also referred to as cognitive dissonance. This aspect has been fully explained in section 2.16.5 on pages 86 to 89. Loudon and Bitta (1993:431) refer to Hunt (1957) and state that cognitive dissonance is a psychological state of mind which occurs when a person perceives two cognitions or thoughts which he believes to be true but seem inconsistent and do not fit together. In other words, cognitive dissonance occurs as a result of discrepancy between the consumer's decision and the prior evaluation. Cant *et al* (2002 : 84) refer to Hawkins *et al* (1966) to further explain that customers try to reduce this dissonance by changes in cognitions and attitudes.

Feedback also includes disposal of product after use in the post-consumption stage. The disposal of products actually goes through a process of problem recognition, information search, evaluation, disposal decision and post-disposal results (Loudon & Bitta, 1993:590) (section 2.16.5 p. 88). No feedback was required as regards disposal of used and waste water. The practice in Mauritius is to dispose waste water into the sewerage system wherever it exists, and in absorption pits where the sewerage system does not exist.

Feedback from domestic water consumers has been obtained through the consumer survey and discussion of the focus groups. This feedback has assisted in the development of the new model. Also the elements contained in the preceding paragraphs have been analysed against the feedback from the consumer survey.

According to question 5 of the survey 210(95.4%) of the respondents were satisfied with the way officers of the CWA treated them when they went to apply for a water supply. They were therefore satisfied. However, 5(2.3%) of them were not satisfied in that respect as they expressed a different opinion (section 5.8, table 5.15 p. 248). In the same context of CWA employees, feedback from the survey reveals a divergence of opinions as regards employees' courteousness, helpfulness and knowledgeability. On the other hand, 10(4.5%), 16(7.3%) and

10(4.5%) of the respondents were respectively dissatisfied as regards these qualities in CWA employees. (section 5.22 pp. 313-318). As public officers, CWA employees are expected by the consumers to be of the level desired by them. Where this is not so, the consumer experiences both dissatisfaction and dissonance. According to Cant *et al* (2002:84), customers try to reduce dissonance by changes in cognitions and attitudes. This view does not become necessary in the case of the domestic water consumers in Mauritius. In the event of dissonance, the Mauritian consumer has neither the necessity nor any reason to alter his cognition and attitude to justify CWA employees. The reason is that CWA operates within a Government framework with clear legal provisions, rules and procedures.

Feedback on price is established by questions 6 and 17 of the survey. Question 6 is related to the installation cost claimed by the CWA for a domestic water connection. The survey reveals that 97(44.1%) of the respondents found the installation cost to be high and were therefore dissatisfied. 123(55.9%) of them classified it from reasonable to low. These consumers were therefore satisfied with the connection cost of the water connection (section 5.9, table 5.16 p. 250). As regards the domestic water tariff in Mauritius, 85(38.6%) of the respondents were not satisfied therewith as they qualified it as high (Q.17). 135(61.4%) found the domestic water tariff in Mauritius as reasonable, quite low or low (section 5.17, table 5.36 p. 284). Viewed within the context of the view reported by Sweeney (2001:203), value which is seen in the satisfaction of people-based needs, does not seem to fully exist in the case of consumers who qualified the prices claimed by the CWA as high.

Consumer feedback on sufficiency of supply is established by questions 15, 16 and 28.1. 165(75%) of the respondents were well satisfied with the supply of water to them and their water related needs were well met (Q.15). However, 51(24.1%) of the respondents expressed a different view and were therefore not satisfied (section 5.15, table 5.31 p. 277). Question 16 of the survey revealed that



164(74.5%) of the respondents were satisfied with the volume of water supplied to them (section 5.16, table 5.32 p. 278). The respondents were also required to express their opinion on the sufficiency of water supply generally in the country. 165(75%) of the respondents qualified the volume of water supplied in the country as sufficient. However, 54(24.5%) of the respondents expressed a different view thus indicating grounds of consumer dissatisfaction (section 5.23, table 5.59 p. 318).

Question 18 of the survey provides feedback on the drinking quality of water. 199(90.5%) of the respondents were satisfied with the drinking quality of water; while 25(7.7%) expressed dissatisfaction ( section 5.18, table 5.40 p. 291). Complaints by themselves provide feedback (section 5.21 p. 306). At the same time, complaints handling constitutes another equally important area of feedback. Feedback on this aspect is established by questions 25 and 26 ( sections 5.21.2, 5.21.3, tables 5.54, 5.55 pp. 310,311). On the whole, 30(13.7%) of the respondents were satisfied that their complaints had been dealt with efficiently; while 15(6.8%) were dissatisfied therewith (Q.25). At the same time, 29(13.1%) of the respondents were satisfied with the time taken to finalise their complaints; while 17(7.8%) were dissatisfied in that respect (Q.26).

As regards the service provided generally by the CWA in the country, 191(86.7%) of the respondents were satisfied therewith; whereas 24(11%) of them expressed dissatisfaction (Q.28.2) (section 5.23, table 5.60 p. 319).

According to theory 10, the perception of the domestic consumer on volume of water generally provided in Mauritius by the CWA as being sufficient is related to the urban/rural regions (section 5.28.10 p. 369). This aspect is further discussed in section 5.28.10 and is depicted in the new model.

As explained in the literature review (section 2.16.5 p. 86) and in the opening paragraphs of this section, feedback from the consumer can be seen in the form of satisfaction or dissatisfaction. In the case of satisfaction, the

consumer may have a more favourable opinion of the product. However, if the consumer is dissatisfied, his post-purchase attitude will be less favourable towards the product (section 2.16.5 p. 87). In the present context, water is unique and without substitute. Also, the CWA is the sole supplier of water in Mauritius. Thus the consumer is neither able to switch the product nor the supplier. Such consumers may adopt a complaining behaviour. They may express their dissatisfaction by word of mouth, or complain to the CWA, to Government bodies, alert public opinion through the media, and depending on the magnitude of the money involved even claim redress through court.

In the new model as in the integrated model, feedback ultimately reaches the supplier. In case of dissatisfaction, the consumer engages in further information search. Feedback including that of dissatisfaction is an opportunity for the CWA to improve its service and to reach consumer satisfaction. According to Nyer (1999) as reported by Kasouf *et al* (section 2.23 p. 107), encouraging consumers to express their dissatisfaction may cause increase in satisfaction. Feedback which is the last phase of the consumer behaviour, completes the new model of consumer behaviour in respect of domestic water in Mauritius.

The next step is to compare the outcomes in the integrated model and in the new model. The relevant items of outcomes in the two models are shown in table 6.15.

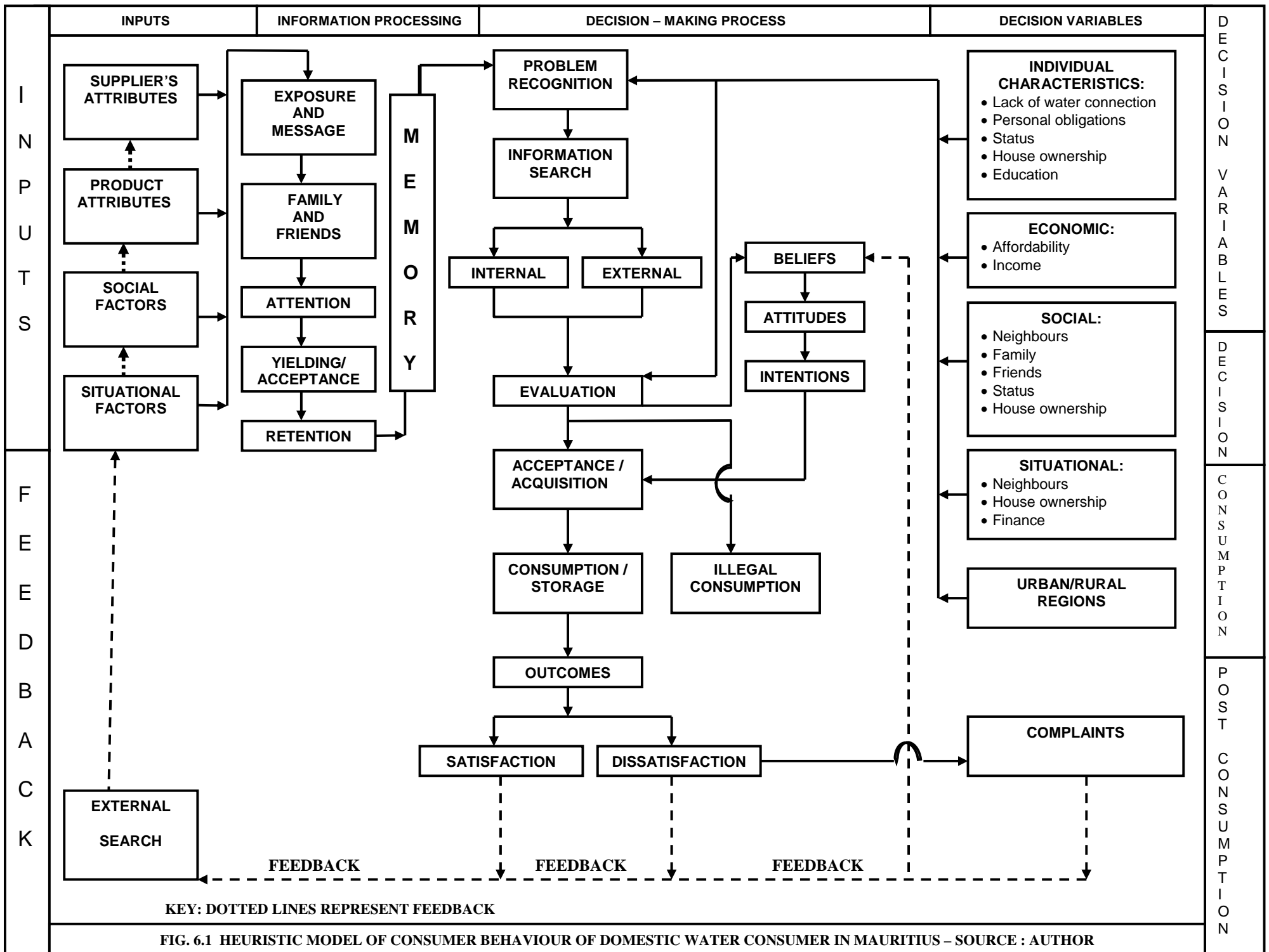
**Table 6.15 Outcomes**

Description	Variables in Integrated Model	Variables in New Model
Outcomes	<ul style="list-style-type: none"> <li>• Satisfaction</li> <li>• Dissatisfaction</li> <li>• Beliefs</li> <li>• Attitude</li> <li>• Intention</li> <li>• Feedback</li> </ul>	<ul style="list-style-type: none"> <li>• Satisfaction</li> <li>• Dissatisfaction</li> <li>• Belief</li> <li>• Attitude</li> <li>• Intention</li> <li>• Complaints</li> <li>• Feedback</li> </ul>

Each of the variables mentioned in table 6.15 have been explained in the preceeding paragraphs. Satisfaction and dissatisfaction are contained in both models. These two variables consolidate the beliefs, attitudes, whether positive or negative towards the product or service. Beliefs and intentions create the intention in the consumer to repurchase or not to purchase at all the product or service. Beliefs, attitudes and intentions are shown in both models. Of the two models, only the new model specifically mentions complaints. This variable in the new model refers to domestic water in Mauritius and is a direct result of dissatisfaction experienced by the consumer. The integrated model is generally applicable to all goods and services. It has been generated from the four models that have been reviewed in chapter 3. In these four models and in the integrated model, complaints are assumed to be included in feedback.

## **6.9 CONCLUSION**

This chapter is a follow up of the research findings contained in chapter 5. The research findings are based on the consumer survey carried out in the context of this study, the tests of the hypotheses, the discussions of the focus groups and an informal interview of the senior meter reading cadres of the CWA. This chapter is devoted to the development of a model related to the consumption of domestic water in Mauritius. The development of the model is one of the objectives of this thesis. The research findings and the integrated model developed in chapter 3 have contributed towards the development of this model. The integrated model contains the common elements of the four models reviewed in chapter 3, namely, the Nicosia model, the Howard and Sheth model, the Engel-Blackwell model and the Engel-Blackwell-Miniard model. The integrated model serves as framework for the new model. This new model has been discussed taking into consideration the literature review including the four models of consumer behaviour and the integrated model. As shown in this chapter, the new model of consumer behaviour of domestic water consumers is specific to Mauritius.



## CHAPTER 7

### CONCLUSIONS AND RECOMMENDATIONS

#### 7.1 INTRODUCTION

This chapter winds up the research. It highlights the conclusions of this research and contains some useful recommendations which flow from the findings and which could be in the interest of both the consumer and of the supplier of water in Mauritius. The new model of consumer behaviour that has been developed is contained in the previous chapter. Finally, this chapter gives the limitations of the research and makes suggestions for future research.

#### 7.2 REVIEW OF THE RESEARCH OBJECTIVE

This being the last and concluding chapter of the research, it is relevant to review the research objective. The objective of the research is to study consumer behaviour with respect to domestic water in Mauritius, develop theories and to answer the question:- what does the consumer behaviour model for consumption of domestic water in Mauritius look like ? In the process, the research further attempts at:-

- (i) Establishing whether cultural, geographical and/or occupational and any other variables bear any causal relationship with domestic water consumption in Mauritius.
- (ii) Defining the perception of consumers towards domestic water as a product of consumption in Mauritius

In order to achieve the objectives of the research, the thesis covers the following areas of consumer behaviour and consumer decision-making process :-

- (a) inputs
- (b) the pre-purchase information seeking behaviour;

- (c) decision variables
- (d) the decision-making behaviour
- (e) the purchasing behaviour
- (f) the consumption behaviour;
- (g) the post-consumption behaviour including dissatisfaction and remedial action.

The findings of the research are detailed in chapter 5. Chapter 6 is devoted to the development of a new model of consumer behaviour with respect to domestic water in Mauritius. In this chapter, a summary of the consumer survey is followed by the sustained theories along with the conclusions and recommendations.

### **7.3 CONCLUSIONS FROM THE CONSUMER SURVEY AND RECOMMENDATIONS**

The replies of the respondents to the Survey Questionnaire are detailed and discussed in chapter 5. This section gives the conclusions and some useful recommendations. Reference is often made to the models of consumer behaviour discussed in chapter 3 and to the integrated model. These models are on pages 119, 122, 125, 129 and 166 respectively.

#### **7.3.1 The Potential Subscribers**

The Central Water Authority is the sole undertaker of water supply in Mauritius (Act No. 20 of 1971). It is in a monopoly situation and is thus assured of its market. According to section 5.6 and question 2 (pp. 232-240) of the survey, the reason which prompt consumers to apply for a domestic water connection in Mauritius range from inability to continue sharing supply of neighbour, new house ownership, affordability, status like others, to request of family and friends. New house ownership remains the main reason for a domestic water connection with 76.4% of the respondents falling in that category.

The role of the supplier is well detailed in the models discussed in chapter 3. In the Nicosia model, the firm's attributes are in subfield one. In the Howard and Sheth model, the firm's inputs are in the significative and the symbolic stimuli. In both the Engel-Blackwell and in the Engel-Blackwell-Miniard models, consumer behaviour is marketer dominated and influenced by other variables which may include cultural and social environment and unanticipated circumstances.

In the integrated model, the inputs are represented by the supplier's attributes, product attributes and social environment. The new model, which is specific to domestic water consumers in Mauritius speaks of supplier's attributes, product attributes, social factors and situational factors as inputs. In the case of Mauritius, the supplier of water does play its role as marketer and endeavours to provide an efficient customer service to the consumer as witnessed by replies to question 4 whereby 96.8% of the respondents had felt it easy to find out where to apply for a water supply (p. 242).

The conclusions that can be drawn from the survey and from observations of what takes place in practice in the local context are as below:-

- (i) The tendency in Mauritius is for every household to have a water supply because water is a vital commodity of daily use. It indicates the mind set of the Mauritian consumers to move towards social upliftment and self-reliance.
- (ii) New ownership of houses in Mauritius constitutes the main reason for applying to the CWA for a domestic water supply. A new house without a water supply is incomplete in itself.

The following are accordingly recommended:-

- The development of residential areas in Mauritius should go along with the development of water supply infrastructure.

- The country should be guided by the philosophy of a water connection for each home.

The recommendations are relevant in that squatting on state land through poverty is still in existence in the local context. The focus groups also expressed the same opinion (section 5.2.2 p. 216). The recommendations would contribute towards personal and social development.

### **7.3.2 Social Status**

Question 2 of the survey (p. 233) carries with it the notion of status. 24.5% of the respondents were sharing the water supplies of their neighbours, implying in other words that they were lower than the latter on the social scale. New house ownership by itself (76.4%) witnesses social upliftment. 26.4% of the respondents could afford a water connection; while 18.6% were motivated through status.

Social status in the context of consumer behaviour is present in the models reviewed in chapter 3. In the Nicosia model, status is in the consumer's attributes; while in the Howard and Sheth model, status is in social class. In the Engel-Blackwell and in the Engel-Blackwell-Miniard model, reference groups exert external influence on status. In the integrated model, status as input is present in the social environment. As a decision variable, status is described to be one of the characteristics of the individual. A similar situation emerges in the new model. Here status is present both as an input and as a decision variable. At input stage, status can be viewed as a social factor. It is also specifically mentioned as a decision variable among the individual characteristics.

The conclusion that can be drawn in the case of domestic water consumption is as below:-



Consumers in Mauritius who rely on their neighbour for their domestic water, would apply for a water supply of their own should their situation so permit in order to be like others. Status and social factors motivate them in that direction.

The following is accordingly recommended:-

Needy domestic consumers without a water supply should be encouraged to have one.

This recommendation is motivated by the life sustaining nature of water and by the necessity for health and hygiene.

### **7.3.3 Social Groups**

Section 5.6.6 (p. 235) shows that in 9.1% of cases, social groups, such as family and friends, did influence consumer behaviour in Mauritius in deciding to acquire a domestic water supply. This is because water is an item of consumption which concerns members of the family and social relations alike.

### **7.3.4 Information Search by Consumer**

Information search is an important element in consumer behaviour (section 2.16.2 p. 81). It is also present in all the models that have been reviewed. In the Nicosia model, information search is in search evaluation. In the Howard and Sheth model, overt search represents search for information. The Engel-Blackwell model mentions search; whereas the Engel-Blackwell-Miniard model makes mention of both search and internal search. In the integrated model and in the new model, the consumer engages himself in both internal and external search for information.

Information search for a domestic water supply in Mauritius has been discussed in detail in section 5.7 (p. 240). According to the consumer survey, 96.8% of the respondents had declared that it was easy to find out where to apply for a water supply. Search for information by the respondents is evidenced by question 3 of the survey (p. 238). 87.3% of the respondents already knew that the CWA was responsible for water supply in Mauritius, 11.4% enquired from the CWA. 5.0% enquired from family and friends, while 0.9% got the required information through television programmes and communiqués. According to the crosstabulations in section 5.7 (pp. 243 - 245), the CWA is well positioned in the minds of all the ethnic groups. The results show that 98% of Hindus, 100% of Muslims, 95.8% of Sino-Mauritians and 93.3% of the General population found information search for a water connection to be easy. As regards occupational groups, 100% of professionals/managers, 98% of middle management and 95.6% of manual/unskilled workers had found information search to be easy. The same conclusion applies to residential regions as 97.9% of urban and 95.9% of rural respondents had declared information search to be easy.

The conclusion that can be drawn is as below:-

As far as the domestic water consumers in Mauritius are concerned, they are well aware of the water supplier and of its responsibilities in the country. Moreover, information search by consumers for the obtention of a water supply in Mauritius is easy.

The following is accordingly recommended for continuous improvement:-

The domestic water consumer should at all times be a well informed consumer. The supplier should continue its dissemination of information as a service provider of an essential service to further achieve good customer relationship and customer satisfaction.

### **7.3.5 The Consumers' Attitudes in Respect of The Supplier**

The firm's attributes are important elements in the consumer behaviour models presented in chapter 3. Subfield one of the Nicosia model makes mention of the firm's attributes. The Howard and Sheth model speaks of input stimulus display by the firm. Both the Engel-Blackwell and the Engel-Blackwell-Miniard models contain the marketer dominated stimuli. The integrated model and the new model make mention of supplier's attributes.

According to question 5 of the survey and section 5.8 (p. 248), 95.4% of the respondents agreed that they were well treated when they went to the CWA to apply for a water connection. Moreover, 87.8% of the respondents had qualified CWA employees as courteous, 78.1% found them to be knowledgeable (section 5.22 p. 313). It may be concluded that the domestic water consumers are generally satisfied with the supplier in Mauritius. However, every effort should be made so that the employees meet the expectations of the consumers.

### **7.3.6 The Price of a Water Supply**

The price of a water supply refers to the price of the infrastructure and connection. This item has been fully examined in section 5.9 (p. 250). Nearly, half of the respondents qualified the installation costs of a domestic water supply as high. Also a small minority of the 13.2% of the respondents contracted loans in order to be able to acquire a domestic water supply (section 5.12 p. 269). The crosstabulations in section 5.9 (pp. 252, 253) show the perception on price of a water connection among ethnic groups, occupational groups and residential regions. About 50% of Hindus and of the General Population qualified the price of a water connection to be high. The figure for Muslims and Sino-Mauritians was 35% and 20% respectively. On the other hand, about a quarter of professionals and middle managers found the price to be high; while the figure among

manual/unskilled workers was twice as much. As regards residential areas, 50% of the villagers declared the price of a water connection to be high compared to 37% of urban dwellers. The majority of the focus group felt that the price of a water connection in Mauritius was on the high side. A detailed discussion on this item is contained in section 5.9 (pp. 250-255).

Consumer behaviour is very much influenced by the price of a product or service. The price element is contained in all the models that have been discussed. In the Nicosia model, price is in the means-ends in field two. In the Howard and Sheth model, price is presented as a significative and symbolic input stimulus. In both the Engel-Blackwell and the Engel-Blackwell-Miniard models, price is in the marketer dominated stimuli. In the integrated model, price is contained in the evaluation criteria. In the new model, the economic and the situational decision variables take into consideration the price element of a water connection.

The conclusion that can be drawn is as below:-

A substantial proportion of domestic consumers in Mauritius find the price of a water connection to be high.

The above-mentioned conclusion requires close attention by the supplier; the more so, as the latter is in a monopoly situation and is a para-statal organisation, which is Government owned. It is accordingly recommended that:-

The potential subscribers who find it difficult to pay for a domestic water connection deserve some consideration in view of the very specific nature of the commodity. One possibility could be to grant facilities to potential domestic subscribers to pay the installation costs and deposit for a domestic water connection in monthly installments over a reasonable period. This recommendation would go a long way in improving the standard of living of needy consumers.

### **7.3.7 Consumer Involvement And Complexity of Decision-Making**

In the models that have been reviewed in chapter 3, namely, the Nicosia model, the Howard and Sheth model, the Engel-Blackwell model and the Engel-Blackwell-Miniard model, the involvement of the consumer can be said to depend on the evaluation of the decision variables in relation to the magnitude of the problem felt by the consumer. In like manner, in the integrated model, the evaluation of the decision variables and the problem recognition determine the involvement of the consumer and the complexity of the decision-making. In the new model, the decision variables are individual characteristics, economic factors, social factors, situational factors and residential areas. The item under reference has been lengthily discussed in section 5.10 (p. 256-266). According to the crosstabulations (pp. 258-260), the percentage of each ethnic group which qualified the decision-making to have a water connection as easy was 90% and above. The figures were 90.2% for Hindus, 94.1% for Muslims, 100% for Sino-Mauritians and 90% for General Population. The same picture emerges for the occupational groups. The figure for professionals was 97%, for middle management 93.9% and for manual/unskilled workers 89.9%. This pattern is similar to that of residential areas. The proportion is 95.8% for urban areas and 89.7% for rural regions. From figures contained in tables 5.21 to 5.23 (pp. 258 - 260), it would appear that the percentage of respondents who found decision-making for a water connection as difficult was highest among the General Population, manual/unskilled workers and rural residents.

The consumer's involvement in decision-making is generally influenced by the degree of complexity of the problem experienced by him. As evidenced by replies to question 7 (p. 260), 91.8% of the respondents had found it easy to decide whether to go ahead with their application for a water connection as against 7.3% who expressed a different view. Moreover' 14.5% of the respondents were discouraged at going ahead with their application; while 14.5% found the installation cost to be too expensive and 4.5% faced objection from their

neighbour to the laying of pipes across the latter's premises (section 5.10.2 p. 261).

The conclusions that can be drawn are as below:-

- The problem faced by the domestic consumer in Mauritius in the absence of a water supply can be high or low depending on situations.
- The decision to acquire a domestic water supply in Mauritius demands high or low involvement of the consumer in the decision-making process according to situational circumstances.

### **7.3.8 Alternative Evaluation**

Alternative evaluation or search is a natural process in consumer behaviour. It allows the consumer to make his choice. In the Nicosia model, alternative evaluation is in search evaluation. In the Howard and Sheth model, the choice criteria is used for alternative evaluation. Both the Engel-Blackwell and the Engel-Blackwell-Miniard models make mention of alternative evaluation before the consumer makes his choice. In the integrated model and in the new model, evaluation is specifically mentioned. As regards water, substitutes do not exist. Reference can only be made to alternative sources of water. According to question 11 of the survey (section 5.11 p. 266), 13.2% of the respondents had searched for an alternative source of domestic water, for example, from their neighbour.

The conclusion that can be drawn is as below:-

In Mauritius, domestic consumers in their quest for a domestic water supply generally turn to the supplier, except in few marginal cases where through circumstances, the

consumers have to rely on neighbours as an alternative source of supply.

It is recommended that:-

These few marginal cases be given special consideration by the supplier, even if these may require solutions on a case to case basis.

### **7.3.9 The Decision**

The final decision of the respondents to have their own water supplies has been explained in section 5.12 (p. 268). Decision - making is an integral part of a consumer behaviour model. This process is referred to as decision/action in the Nicosia model. In the Howard and Sheth model, decision is in the purchase. In the Engel-Blackwell model and in the Engel-Blackwell-Miniard model, decision is in choice and purchase respectively. In the integrated model, decision takes place as choice/purchase. In the new model, decision is shown as acceptance/acquisition. Here the consumer has no choice as to the product. Also in the case of Mauritius, the consumer acquires the water supply and continues to pay a monthly rent for the water connection in addition to the monthly water charges. According to question 12 of the survey (section 5.12 p. 268). 85% of the respondents finally decided to have a domestic water connection because they felt obliged to do so and could afford it. 13.2% felt equally obliged and borrowed money for this purpose and 15.5% were motivated by family and friends.

The conclusion is as below:-

In Mauritius, the greater majority of consumers do not undergo financial constraints in order to acquire a domestic water supply. The small minority which does, would borrow

money for the purpose. Social groups, family and friends do contribute towards decision-making in that context.

### **7.3.10 The Service: Installation of Water Supplies**

The models reviewed in chapter 3 indicate that the marketing strategies of the supplier is to ensure business through consumer satisfaction. Satisfaction and dissatisfaction of consumers constitute important items in the integrated model and in the new model. According to question 13 of the consumer survey, 53.7% of the respondents found the time taken by the CWA to connect the water supply to be long and were therefore not satisfied (section 5.13 p. 272).

The conclusion that may be drawn is :-

The time taken to install water supplies to domestic consumers in Mauritius is too long.

This conclusion has serious implications. As per the present procedure, the potential subscriber pays the installation costs in advance to the supplier. On the other hand, there is only a sole supplier of water in Mauritius. Consequently, there does not seem to be any justification for delay in the grant of water supplies in Mauritius. Moreover, good customer service requires meeting the expectation of the customer. The following is accordingly recommended:-

Every effort should be made by the supplier to minimise the time taken to install water supplies to the premises of domestic consumers once they have paid the installation costs and thus meet the expectations of the consumers.



### **7.3.11 Confidence in the Product**

Confidence in a product or service is very much dependent on the benefits derived therefrom. This aspect has been dealt with in section 5.14 (p. 274). In the Nicosia model, confidence is in experience. In the Howard and Sheth model, confidence is specifically mentioned. In the Engel-Blackwell model and in the Engel-Blackwell-Miniard model, confidence emanates from satisfaction and is responsible for beliefs, attitudes and intention. In the integrated model and in the new model, confidence is in the satisfaction of the consumer, which in turn determines the beliefs, attitudes and intention in the consumer. According to question 14 of the survey (section 5.14 p. 275), 89.6% of the respondents agreed that consumers without a water connection should have one. In other words, the respondents were also expressing their confidence in the product.

The conclusion that can be drawn is :-

in the case of Mauritius, the benefits to be derived from having a domestic water supply is such that those having such a water supply would advise consumers without it in their homes to have one.

### **7.3.12 Needs Satisfaction and Sufficiency of Water Supply**

The aim of the supplier according to the models presented in chapter 3 is to ensure consumer satisfaction. This is also the case in the integrated model and in the new model. In case feedback shows that this result is not being achieved, then the marketing strategies and the marketer dominated stimuli have to be reviewed. The consumer survey established the extent to which the water related needs of domestic consumers in Mauritius were satisfied and whether they were receiving water in sufficient quantity. These aspects are discussed in sections 5.15 and 5.16 (pp. 276, 278). According to tables 5.33 to 5.35 (pp. 279 - 281), about 75% of Hindus, Muslims and General Population declared that their

water related needs were well satisfied as against 25% who expressed a different view. 83% of Sino-Mauritians had expressed satisfaction as against 12.5%. On the other hand, the figures show that the greater majority in each occupational group seemed to be equally well satisfied. The figures for professionals was 69.8%, for middle management 73.9% and for manual/unskilled workers 76.8%. The results further indicate that villagers were less satisfied by the supply of water to them compared to urban residents. The figures were 66.7% and 95.6% for rural and urban areas respectively.

According to question 15 of the survey (p. 277), 75% of the respondents declared that their water related needs were well satisfied with the water supplied to them; while 24.1% expressed a different view. Moreover, according to question 16 of the survey (p. 277), 74.5% of the respondents were satisfied with the volume of water supplied to them as against 25.5% who were not. The conclusion is as follows:-

The greater majority of domestic consumers in Mauritius are supplied water in sufficient quantity and their water related needs are consequently well satisfied.

The above conclusion has certain implications. A minority of some 25% of the domestic consumers are not being supplied water in sufficient quantity. Moreover, their water related needs are not satisfied to their expectation. The focus groups expressed a similar view (p. 215). This aspect needs serious and urgent consideration by the supplier. Thus the following is accordingly recommended:-

Efforts are required from the supplier in order to improve water supply in localities where same is deficient in order to meet consumer satisfaction.

### **7.3.13 Price of Domestic Water**

The price of a product determines the purchasing power of the consumer to a large extent. The relevance of price to the consumer behaviour models discussed in chapter 3 has been established in section 5.9 (p. 284). The price of domestic water in Mauritius is the domestic water tariff that has been lengthily discussed in section 5.17 ( pp. 284-291). According to question 17 of the survey (p. 283), 38.6% of the respondents found the domestic water tariff in Mauritius to be high, 55.9% found it reasonable, 4.1% found it quite low and 1.6% found it low. The crosstabulations in tables 5.37 to 5.39 (pp. 286-288) show a different perception on the domestic water tariff among different ethnic groups. The number of respondents of each ethnic group who qualified the water tariff as high was 40.2% for Hindus, 26.5% for Muslims, 25% for Sino-Mauritians and 48.3% for General Population. The figure for occupational groups was 6% for professionals, 32.6% for middle management and 48.6% for manual/unskilled workers. Finally, more rural residents qualified the water tariff as high compared to urban residents. The figures were 39.8% and 37.1% for rural and urban respondents respectively. Some members of the focus groups found the price of domestic water to be high (section 5.2.5 p. 217).

The conclusion drawn is as follows :-

The majority of domestic consumers in Mauritius qualify the domestic water tariff as reasonable, quite low and low. Those consumers who qualify the tariff as high should be an area of concern for the supplier.

The following is therefore recommended:-

The above-mentioned conclusion along with the financial limitations of the domestic consumers needs to be taken into consideration during future water tariff review exercises.

### **7.3.14 Quality of Product**

Quality of a product is one of the factors which determine consumer behaviour. This aspect is shown in the models reviewed in chapter 3. In the Nicosia model, quality of the product is exposed through the firm's attributes. In the Howard and Sheth model, quality is shown as a significative and a symbolic stimulus input. In the Engel-Blackwell model and in the Engel-Blackwell-Miniard model, quality of the product is exposed by the supplier and is experienced by the consumer through satisfaction which in turn consolidates confidence and belief. In the integrated model and in the new model, the consumer is convinced of quality through satisfaction. According to the consumer survey, 90.5% of the respondents agreed that the drinking quality of water supplied to them was good (section 5.18 p. 291). The proportion of each ethnic group who agreed that the drinking quality of CWA water was good was 87.3% for Hindus, 94.1% for Muslims, 79.2% for Sino-Mauritians and 98.3% for General Population (p. 292). The figures among occupational groups were 87.9% for professionals, 87.8% for middle management and 92.0% for manual/skilled workers (p.293). It would thus appear that the higher one's job is, the lower his perception is on the quality of CWA water. Finally, the perception of urban and rural residents was almost the same, that is, 90% (p.293). This aspect is discussed in detail in section 5.18 (pp. 291-296). The majority of the focus groups also agreed that the drinking quality of water in Mauritius is good (section 5.2.7 p. 218).

The quality of drinking water in Mauritius is an important item both for the health of consumers and for their confidence. The few (8.6%) domestic consumers who lacked confidence in tap water deserve close attention. It is a fact that the standard of the CWA drinking water has to be of World Health Organisation standard. The supplier should strive to create confidence in the consumers with facts and figures and through transparency.

It can therefore be concluded that :-

Except a small minority, the drinking quality of tap water in Mauritius is considered to be good by domestic consumers.

The following is therefore recommended:-

The supplier should publicise the results of water tests for the information of the public with a view to creating and maintaining confidence in the quality of its drinking water in consumers in Mauritius.

### **7.3.15 Willingness to Pay More**

Willingness to pay or to pay more falls under the feedback process in the consumer behaviour models presented in chapter 3, in the integrated model and in the new model. This aspect is generally established by the marketer through surveys. Question 19.1 (section 5.19 p. 296) of the consumer survey established that 63.2% of the respondents were not agreeable to pay more for a better service. According to question 19.2, 65.5% of the respondents were unwilling to pay more for a better quality of water. (section 5.19 p. 297)

The conclusion that can be drawn is as follows:-

The greater majority of domestic water consumers in Mauritius are not willing to pay more for a better quality of water and for a better service. They agree that both the quality of water and of service provided by the supplier are good.

It is accordingly recommended that :-

Consumers' unwillingness to pay more should be given due consideration while deciding on the tariff policy of domestic water in Mauritius.

### **7.3.16 Consumption of Bottled Water**

As mentioned in section 5.20 (p. 298) and as established by question 20 (p. 299), 59.5% of the respondents had declared consuming bottled water either very often, or occasionally. According to question 22 (p. 299), 10.9% of the respondents consumed bottled water because of lack of confidence in CWA tap water, 1.4% for status, 19.1% through affordability and 37.7% because of convenience. Based on observation, it may be said that in the case of Mauritius, affordability remains the predominant factor for the consumption of bottled water, even if, such consumption is but occasional. It is seen from the crosstabulations in tables 5.49 to 5.51 ( pp. 303, 304) that the proportion of ethnic groups who consume bottled water is 53.9% for Hindus, 61.8% for Muslims, 100% for Sino-Mauritians and 51.7% for General Population. As regards occupational groups, the figure is 90.9% for professionals, 71.4% for middle management and 47.8% for manual/skilled workers. Such consumption is 67% for urban residents and 53.7% for rural residents. Thus consumption of bottled water is highest among Sino-Mauritians, professionals and urban residents.

There are only two suppliers of bottled water in Mauritius. It is again asserted from a purely observational point of view that the market for bottled water in the local context is a lucrative one. It is accordingly recommended that:-

The sole supplier of water in Mauritius, which is also the sole owner of water resources, should carry out a feasibility study on the market of bottled water with a view to establishing whether to start the business of bottled water in the country and with a view to offering the product to consumers at a competitive price.

### **7.3.17 Consumer Complaints**

Consumer complaints are found in the post consumption stage of consumer behaviour. In the models reviewed in chapter 3 and in the integrated

model, these are referred to as feedback and emanate from dissatisfaction/dissonance experienced by the consumer. Complaints are specifically mentioned in the new model as a consequence of dissatisfaction. This aspect is dealt with in detail in section 5.21 (p. 306-313). In the Nicosia model, feedback allows the firm to review its attributes. In the Howard and Sheth model, feedback serves to review the input stimuli by the supplier. In the Engel-Blackwell and in the Engel-Blackwell-Miniard models, feedback emanate from the dissonance/satisfaction of the consumer and allows the marketer to review its strategies. In the integrated model, complaints are implied by consumer dissatisfaction and reach the supplier through feedback. In the new model, feedback from the dissatisfaction experienced by the consumer allows the supplier to revisit his attributes and improve his supply and service. In the case of Mauritius, complaints from domestic consumers constitute an important channel in feedback.

The complaining behaviour of domestic water consumers of Mauritius is established by questions 21 to 26 of the consumer survey (section 5.21 pp. 306 - 313). 23.2% of the respondents had complained to the CWA (Q. 33). Reasons for complaining included excessive billing (7.3% of respondents), insufficient supply (9.1% of respondents), broken pipe at consumer's place (1.8% of respondents), broken pipe on roads (4.5% of respondents), defective meters (4.5% of respondents), dissatisfaction with employees (3.2% of respondents) (Q. 24). On the whole, 29.4% of the complainants, that is, 6.8% of the respondents opined that their complaint had not been dealt with efficiently.

The conclusion drawn from section 5 .21 and the previous paragraph is that:-

Consumer complaints which emanate from the dissatisfaction of domestic water consumers in Mauritius are not dealt with as efficiently and within the time expected by them. These complaints

range from insufficient water supply, water leakage, excessive bills to unsatisfactory customer service.

The following is accordingly recommended:-

- A serious effort is required from the service provider to minimise consumer complaints and to deal with complaints efficiently and within the time expected by consumers.
- Consumer awareness campaigns may go a long way in educating the consumer with a view to reducing complaints and increasing consumer satisfaction.
- Emphasis on continuous training of employees is essential to achieve efficient performance including proper complaints handling. Focus should be on total quality.
- Special attention is required to maintain good customer relations.

### **7.3.18 Consumer Perception of the CWA Employees and of the CWA**

According to the models discussed in chapter 3, confidence in a product is important for the creation of a positive attitude and belief in the consumer. Such positive attitude and belief in the firm and in its employees are equally important. This aspect is dealt with in sections 5.22 and 5.23 (pp. 313 - 326). On the other hand, members of the focus groups were divided in their opinion on satisfaction received from CWA workers. Questions 27.1 to 27.3 (pp. 314,315) establish that 58.2% of the respondents found CWA employees to be courteous, 60.% found them to be helpful, 62.2% found them to be knowledgeable. On the other hand, 53.2% of the respondents agreed that the water generally provided by the CWA was sufficient; while 69.5% qualified the service generally provided by the CWA as good.



According to section 5.23 table 5.61 (p. 320), the proportion of ethnic groups who qualified the supply of water as being generally sufficient in the country was 72.6% for Hindus, 76.5% for Muslims, 87.5% for Sino-Mauritians and 73.4% for the General Population. According to table 5.62 (p.321), 75.8% of the professionals, 69.4% of middle managers and 76.9% of manual/skilled workers qualified the water supply in the country as sufficient. The same opinion was expressed by 89.7% of urban consumers and 73.4% of rural consumers (table 5.63 p.321). Moreover, the focus groups agreed that water supply in rural areas was not as good as in urban areas (section 5.2.1 p. 215).

As regards the service provided by the CWA in general, 80.3% of Hindus, 94.1% of Muslims, 83.3% of Sino-Mauritians and 95.0% of General Population qualified it as good (table 5.64 p. 323). The same opinion was expressed by 87.9% of professionals, 81.7% of middle management and 89.4% of manual/skilled workers (table 5.65 p. 324). As regards residential areas, 89.7% of urban residents and 84.6% of rural residents agreed that the service provided by the CWA in general was good (table 5.66 p. 324). These figures indicate that as regards the water supply and service generally provided by the CWA, some differences in perception do exist among ethnic groups, occupational groups and urban/rural regions.

The conclusion that can be drawn is that:-

Based on the perception of domestic water consumers in Mauritius, there is room for improvement by the supplier, as regards the consumer care skills of its employees, the water supply and the service provided by it.

It is therefore recommended that:-

In order to give satisfaction to those consumers who are not satisfied, the supplier should enhance the skills of its

employees and improve the water supply and service in Mauritius.

### **7.3.19 Domestic Water Storage**

It is observed that the Nicosia model alone specially mentions storage in field four. In the Howard and Sheth model and in the Engel-Blackwell model, choice, which also means purchase, is deemed to include storage as well. In the Engel-Blackwell-Miniard model, storage is in purchase. In the integrated model, choice/purchase includes storage. In the new model, storage is specifically mentioned. According to question 30 of the survey, 65% of the respondents stored water at their places (section 5.24 p. 326).

It is recommended that:-

Consumers should be encouraged by the supplier to store water for use for at least twenty-four hours so that they can have uninterrupted supply during water cuts.

### **7.3.20 Average Volume Consumed, Average Water Charge And Average Number of Persons in the Family**

The average volume of domestic water consumed per month from each water supply was about 20 m<sup>3</sup> (section 5.25, Q. 32 p. 327). That volume was consumed by a family of about 3.65 persons and the average water charge was about MUR 148.- per month (Q. 31, 32 p. 327). From a purely observational point of view and from generally accepted notion, it may be said that the average volume of water confirmed per family as per the survey may be considered as adequate.

### **7.3.21 Settlement of Water Bills**

The provision of the law regarding settlement of water charges and the behaviour of domestic consumers in that respect have been explained in section 5.26 (p. 328). According to replies to question 34 of the survey, a minority of 38(18%) of domestic water consumers in Mauritius tend not to settle their water charges within the statutory delay. This can to some extent be attributed to the behaviour of consumers in Mauritius.

It is recommended that :-

The supplier should, where applicable, persevere to change through consumer education and public and consumer relations the consumer's habit in Mauritius of not paying the water charges in time. This would ultimately be in the interest of both the consumer and the supplier.

### **7.3.22 Customer Care and Consumer Education**

Some members of the focus groups felt that there was room for improvement of customer care by the supplier. Participant observation also revealed that customers were not prepared to compromise on the issue of customer care.

It is accordingly recommended that :-

Immediate improvement of customer care is required in order to achieve satisfaction of domestic water consumers in Mauritius.

### **7.3.23 Telephone Number '170'**

Telephone number 170 gives quick access to the 24 hours Hot Line Service of the CWA. About half of the focus groups (section 5.2.12 p. 220) were

not aware of this telephone number. Those who were aware observed that the 24 hours Hot Line Service was not quick in replying to the callers.

It is recommended that :-

- The public is made fully aware of the 24 hours Hot Line Service.
- The efficiency of that service be improved as a matter of priority.

### **7.3.24 Wastage by the Supplier**

The focus groups observed that wastage did exist and as examples quoted water losses through leakages in pipes, poor workmanship, inefficient performance of workers, underutilization of plants and equipment and abuse of vehicles. They stressed that consumers were the payers of such wastage (section 5.2.13 p. 220).

The conclusion is that :-

Domestic water consumers are concerned about wastage by the supplier as ultimately, they are the payers of such wastage.

It is therefore recommended that :-

The supplier should as a matter of urgency eliminate wastage where it exists.

### **7.3.25 Illegal use of water**

The following can be concluded from section 6.7.6 (pp. 401-406).

- Illegal use of water does exist in Mauritius. Its quantum and magnitude has not been assessed yet.

- Both domestic and non-domestic consumers pilfer water. Domestic consumers pilfer water to fulfill their water-related needs because of financial constraints or to reduce their expenditure. Non-domestic consumers are prompted to steal water through profit motives.
- People steal water when they are less likely to be detected, for example, after office hours and at night.
- People create situations for stealing water, for example, by tampering with the meter or by effecting by-passes before the meter.

The following is therefore recommended: -

- The supplier should intensify its anti-fraud activities in order to track down illegal use of water in Mauritius.
- Legal action should be initiated against illegal users of water.

By way of concluding remarks, it is worth mentioning the following observations of the focus groups in order to reach up to the expectation of the domestic consumers in Mauritius :-

- The workers need to be guided by higher human values.
- The supplier should live up to the responsibilities entrusted to it by the nation.

#### **7.4 THE DEVELOPING COUNTRIES**

According to the UNDP, some 1.2 billion people still lack access to a safe and adequate supply of drinking water (UNDP, 2001:1-5). Nearly 3 billion people lack proper sanitation facilities. The resulting pattern of disease and shortage of water is one of the most important causes of premature mortality worldwide, as well as a major impediment to personal and national development. At least 2

million children die every year because of unsafe water and inadequate sanitation. In less developed countries, 80 percent of infectious diseases are related to water. Different developing countries face problems due to lack of water to varying degrees. Water is vital for the development of the individual and of the nation. It reflects the health and standard of living of the person.

The findings, conclusions and recommendations of this research are relevant and applicable in developing countries. Ultimately, the guiding principle and priority in these countries should be the provision of safe drinking water in adequate quantity and at a fair and affordable price to the whole nation. These countries should, inter alia, focus on :-

- Availability/provision of water
- Safety/quality of water
- Affordability/price of water
- Level of service

which are necessary for domestic consumers to access to water.

## **7.5 THE NEW THEORIES**

The hypotheses testing and detailed discussions have been carried out in section 5.28 (pp. 346-371). The hypotheses are also contained in that section. The hypotheses are partly supported and partly rejected by some of the variables contained in them. This section gives a summary of the inferences drawn from the statistical results. The theories developed from the tests of the hypotheses H01 to H010 are as hereunder:-

Theory 1: The consumer's involvement in the decision making process to acquire a domestic water supply as being easy is not related to ethnic groups, occupational

groups and age, but is related to urban/rural regions and to level of education.

Theory 2 : The volume of domestic water consumption in Mauritius is not related to ethnic groups, occupational groups and to urban/rural regions, but is related to size of family and opinion on price of water.

Theory 3 : The water related needs of domestic consumers in Mauritius being met by the supply of water are not related to ethnic groups and occupational groups but are related to urban/rural regions.

Theory 4 : The perception of domestic consumers in Mauritius on volume of water supplied to them as being sufficient is not related to ethnic groups, occupational groups, age and level of education but is related to urban/rural regions.

Theory 5 : The drinking quality of water perceived by domestic consumers in Mauritius as being good is not related to occupational groups, urban/rural regions and age but is related to ethnic groups and to level of education.

Theory 6 : The domestic water consumer's willingness to pay more for a better service is not related to age and level of education but is related to ethnic groups, occupational groups and urban/rural regions.

Theory 7 : The domestic water consumer's willingness to pay more for a better quality of drinking water in Mauritius is not related to ethnic groups, age and level of education,

but is related to occupational groups and urban/rural regions.

Theory 8 : The consumption of bottled water by domestic consumers in Mauritius is not related to urban/rural regions and age, but is related to ethnic groups, occupational groups and level of education.

Theory 9 : The manner in which domestic water consumers' complaints are dealt with by the CWA employees in Mauritius is not related to ethnic groups, occupational groups and urban/rural regions.

Theory 10 : The perception of domestic consumers on volume of water generally provided in Mauritius by the CWA is not related to ethnic groups, occupational groups, age and level of education but is related to urban/rural regions.

## **7.6 DEVELOPMENT OF THE NEW MODEL OF CONSUMER BEHAVIOUR**

The development of a model of consumer behaviour with respect to domestic water consumers in Mauritius is one of the objectives of the thesis. The previous chapter 6 was devoted to the development of the new model of consumer behaviour.

## **7.7 LIMITATIONS**

This research is the result of years of research which brought the author closer and closer to the water sector in Mauritius. Information specific to consumer behaviour with respect to domestic water is not easily come across. The same applies to theories and models in that specific context.



The sample size of the consumer survey is considered adequate. A much larger sample would certainly have fulfilled the wish of the author. Time and resources were the major constraining factors.

The present research is in respect of domestic water consumers who represent ninety-six percent of the consumers of the CWA in Mauritius. The remaining ten thousand consumers are the non-domestic consumers who are sub-divided into thirteen categories. These non-domestic consumers do not form part of this study.

It is felt that more research is required in the field of consumer behaviour of water consumers in the local context and in the region. This will generate more information and contribute towards more knowledge.

## **7.8 SOME SUGGESTIONS FOR FUTURE RESEARCH**

One very important area of research in the behaviour of consumers of domestic water in Mauritius and elsewhere is to study the mode, the reason, the justification and the volume of water usage. The resources to be deployed for such a research would be substantial. The findings would have bearing on the consumer, on the country and would go as far as advising on minimum production, maximum satisfaction, elimination of wastage and conservation of natural resources. The span of such research would be large but the benefits to be derived from such initiative would be equally large.

The present research relates to domestic consumers of water in Mauritius. The non-domestic categories both individually and collectively constitute another important and interesting areas of further research in the field of consumer behaviour.

## **7.9 CONCLUSION**

Chapter 5 contains the findings of the consumer survey and of the tests of the hypotheses together with a detailed discussion of these findings.

The development of a new model of consumer behaviour with respect to consumers of domestic water in Mauritius is one of the objectives of the thesis. Chapter 6 has been devoted for this purpose. The new model has been developed based on the findings of the consumer survey and the new theories. The new model has further been analysed against the Nicosia model, the Howard and Sheth model and the Engel-Blackwell-Miniard model which have been reviewed and the integrated model which has been built from the common elements of these four models.

This Chapter 7 contains the conclusions and recommendations. First, the conclusions of the consumer survey along with the recommendations are presented. This is followed by a summary of the new theories based on the tests of the hypotheses.

The findings of the consumer survey, the development of new theories, the construction of the new model of consumer behaviour in respect of the consumption of domestic water in Mauritius constitute the main results of this research. With this ends this thesis. The specific topic of this thesis is a very rare one. This research is but a step in the furtherance of knowledge. It stands as an original regional contribution to the science of management and to its development.

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APPENDIX A

**WATER TARIFFS**

1. Domestic - Tariff 11 (TF 11)

<i>Vol. m<sup>3</sup> p.m.</i>	<i>Rate p.m. per m<sup>3</sup> (Rs)</i>
First 10	4.00
Next 5	5.00
Next 5	6.00
Next 10	8.00
Next 20	11.00
Next 50	14.00
Next 150	18.00
All Additional	24.00
Minimum Charge	40.00

2. Commercial - Tariff 21 (TF 21)

3. Hotels, Board and Guest Houses - Tariff 22 (TF 22)

4. Industrial - Tariff 31 (TF 31)

5. Government, Para-Statal, Religious Bodies - Tariff 51 (TF51)

<i>Vol. m<sup>3</sup> p.m. Tariff (TF) (Rs)</i>	<i>First 100 m<sup>3</sup></i>	<i>Next 150 m<sup>3</sup></i>	<i>All Additional m<sup>3</sup></i>	<i>Minimum Charge p.m.(Rs)</i>
TF 21, TF 51	11.00	14.00	18.00	187.00
TF 22	15.00	20.00	25.00	495.00
TF 31	9.50	11.00	14.00	237.50

6. Agricultural - Tariff41 (TF 41)

<i>Vol. m<sup>3</sup> p.m. Tariff (TF) (Rs)</i>	<i>First 50 m<sup>3</sup></i>	<i>Next 50 m<sup>3</sup></i>	<i>Next 150 m<sup>3</sup></i>	<i>All Additional m<sup>3</sup></i>	<i>Minimum Charge p.m.(Rs)</i>
TF 41	5.00	6.00	8.00	10.00	100.00

7. Public Fountain Tariff 52 (TF 52)

<i>Vol. m<sup>3</sup> p.m. Tariff (TF) (Rs)</i>	<i>First 100 m<sup>3</sup></i>	<i>Next 150 m<sup>3</sup></i>	<i>All Additional m<sup>3</sup></i>	<i>Minimum Charge p.m.(Rs)</i>
TF 52	11.00	14.00	18.00	187.00
	15.00	20.00	25.00	495.00
	9.50	11.00	14.00	237.50

8. Ship - Tariff 61 (TF 61)

<i>Tariff (TF)</i>	<i>Rate/m<sup>3</sup>/p.m. (Rs)</i>
TF 61	25.00

9. Borehole Industries Tariff B1

10. Borehole Agriculture - Tariff BA

11. Surface (River Water) - Tariff SW

<i>Tariff</i>	<i>Rate/m<sup>3</sup>/p.m. (Rs)</i>
B I	5.50
S.W.	1.50 (If not mentioned in a water right granted by the Supreme Court)

<i>Tariff (TF)</i>	<i>Rate/m<sup>3</sup></i>
B A	0.50

REF:

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**SURVEY ON CONSUMER BEHAVIOUR****PURPOSE: ACADEMIC STUDY**

**KINDLY REST ASSURED THAT INFORMATION WILL BE TREATED  
AS STRICTLY CONFIDENTIAL**

*(√ Tick/Fill in Box as Appropriate)*

1 HOW LONG HAVE YOU HAD A WATER SUPPLY IN YOUR NAME ?

MONTHS	1-3	4 - 6	7 - 9	10 - 12	> 12
√					

	Strongly Agree	Agree	No Opinion	Dis-agree	Strongly Disagree
2 I APPLIED FOR A WATER SUPPLY BECAUSE: <i>(More than one answer possible)</i>					
2.1 I was having problems with person from Whom I was taking water.					
2.2 I have my own house.					
2.3 I could afford it.					
2.4 I wanted a supply of my own like others.					
2.5 My family and friends requested me to have one.					
3 I PROCEEDED AS BELOW IN ORDER TO KNOW WHERE TO APPLY FOR A WATER SUPPLY: <i>(More than one answer possible)</i>					
3.1 I already knew that the CWA was Responsible for water supply.					
3.2 I enquired from the CWA.					
3.3 I asked my family and friends.					
3.4 Through Mass Media. <i>(Specify the media)</i>					
4 IT WAS EASY TO FIND OUT WHERE TO APPLY FOR A WATER SUPPLY.					
5 I WAS WELL TREATED BY OFFICERS OF THE CWA WHEN I WENT TO APPLY FOR A WATER SUPPLY.					
6 THE MONEY CLAIMED BY THE CWA FOR INSTALLING THE WATER SUPPLY WAS: <i>(Only One answer possible)</i>					
6.1 High					
6.2 Reasonable					
6.3 Quite Low					
6.4 Low					

	Strongly Agree	Agree	No Opinion	Dis-agree	Strongly Disagree
7 IT WAS EASY TO DECIDE WHETHER TO GO AHEAD FOR THE WATER SUPPLY OR NOT.					
8 DID YOU AT ANY TIME FEEL DISCOURAGED AT GOING AHEAD WITH YOUR APPLICATION FOR A WATER SUPPLY? (Agree/Disagree means YES/NO) (If reply neutral or +ve skip Q.9)					
9 I WAS DISCOURAGED BECAUSE: (More than one reply possible)					
9.1 It was too expensive					
9.2 My neighbour did not allow the pipe to go through his premises					
10 I WAS NOT DISCOURAGED BECAUSE: (More than one reply possible)					
10.1 I could afford it					
10.2 It is better to have one's own water supply					
10.3 It is better to be like others					
11. AFTER MAKING THE APPLICATION FOR WATER SUPPLY, DID YOU SEARCH FOR AN ALTERNATIVE SUPPLY OF WATER e.g. FROM NEIGHBOURS, FAMILY ? (Agree/Disagree means YES/NO) (If reply neutral or +ve Skip Q.12)					
12 I FINALLY DECIDED TO PAY AND HAVE MY OWN WATER SUPPLY BECAUSE: (More than one answer possible)					
12.1 I was obliged to have water supply of my own and I had the money.					
12.2 I was obliged to have a water supply of my own and I borrowed the money.					
12.3 I took the advice of my family and friends.					
13. THE TIME TAKEN BY THE CWA TO INSTALL MY WATER SUPPLY WAS LONG.					
14. I WOULD ADVISE CONSUMERS WITHOUT A WATER SUPPLY TO HAVE ONE OF THEIR OWN.					
15. MY WATER RELATED NEEDS ARE WELL SATISFIED WITH THE SUPPLY OF WATER TO ME.					
16. THE VOLUME OF WATER SUPPLIED TO ME IS SUFFICIENT					
17. THE DOMESTIC WATER TARIFF IN MAURITIUS: (Only One reply to be given)					
17.1 Is high					
17.2 Is reasonable					
17.3 Is quite low					
17.4 Is low					

	Strongly Agree	Agree	No Opinion	Dis-agree	Strongly Disagree
18. THE DRINKING QUALITY OF WATER SUPPLIED TO ME IS GOOD.					
19. I ACCEPT TO PAY A HIGHER TARIFF:					
19.1 For a better service					
19.2 For a better quality of water					
20. THE FREQUENCY WITH WHICH I CONSUME BOTTLED WATER IS AS BELOW: <i>(Only One reply required)</i>					
20.1 Very Often <i>(If 20.1, 20.2 and 20.3 Skip to Q 21)</i>					
20.2 Often					
20.3 Occasionally					
20.4 Never <i>(If reply 20.4 skip to Q.22)</i>					
21. I CONSUME BOTTLED WATER: <i>(More than one answer possible)</i>					
21.1 Because of lack of confidence in quality of CWA water.					
21.2 Because people like me consume bottled water (status).					
21.3 Because I can afford it.					
21.4 Because it is convenient.					
22 I DO NOT CONSUME BOTTLED WATER: <i>(More than one answer possible)</i>					
22.1 Because the quality of CWA water is Acceptable to me.					
22.2 Because bottled water is an artificial Mark of status.					
22.3 Because people like me cannot afford it.					
22.4 Because it serves no especial purpose to me.					
23. I HAVE COMPLAINED TO THE CWA IN THE PAST <i>(If disagree Skip Q.24)</i>					
24. I COMPLAINED TO THE CWA : <i>(More than one answer possible)</i>					
24.1 Because my bill was excessive.					
24.2 Because the water supply was Insufficient.					
24.3 Because the pipe at my place was broken.					
24.4 Because of a broken pipe on the road.					
24.5 Because I felt my meter was defective.					
24.6 Because I was not satisfied with the employees of the CWA.					
25. ON THE WHOLE, MY COMPLAINT WAS DEALT WITH EFFICIENTLY.					
26. THE TIME TAKEN TO FINALISE MY COMPLAINT WAS ACCEPTABLE.					
27. CWA EMPLOYEES ARE:					
27.1 Courteous					
27.2 Helpful					

	Strongly Agree	Agree	No Opinion	Dis-agree	Strongly Disagree
27.3 Knowledgeable					
28. AS REGARDS THE CWA IN GENERAL:					
28.1 The volume of water supplied by it is sufficient					
28.2 The service provided by it is good					

29. DO YOU STORE WATER AT YOUR HOME ?  
(If NO, Skip Q 30)

1. YES	2. NO

30. HOW DO YOU STORE WATER ?

In a ground/overhead tank	1	
In containers	2	
Others (Specify) .....	3	

31. WHAT IS YOUR AVERAGE WATER BILL PER MONTH ?

Rs	
----	--

32. AVERAGE CONSUMPTION PER MONTH ?  
(To be established by interviewer)

	m <sup>3</sup>
--	----------------

33. NO. OF PERSONS USING THE SUPPLY AT YOUR HOME?  
(Fill in Box)

--

34. DO YOU NORMALLY PAY YOUR WATER BILLS WITHIN THE STATUTORY DELAY OF SIXTY (60) DAYS ?

1. YES	
2. NO	

-----

**BACKGROUND INFORMATION**  
(√ Tick/Fill in Box as appropriate)

35. RESIDENTIAL AREA ?

Urban	1	
Rural	2	

36. RELIGION/ETHNIC GROUP ?

1. Hindu	2. Muslim	3. Sino Mauritian	4. General Population

37. AGE OF RESPONDENT ? (Years)



1. 18 - 29	2. 30 - 39	3. 40 - 49	4. 50 - 59	5. 60 and above

38. LEVEL OF EDUCATION ATTENDED ?

ATTENDED		
None	1	
Primary Level	2	
'O' Level	3	
'A' Level	4	
University Level	5	

39. CAPACITY IN WHICH EMPLOYED ?

Professional/Managers/Technicians/ Senior Officials	1	
Middle Management/Sales and Service Workers/Clerks and Administrative Staff	2	
Skilled worker/Unskilled/Manual Workers	3	

40. INCOME PER MONTH (IF POSSIBLE) ?

Up to Rs 5,000.- p.m.	1	
Rs 5,001.- to Rs10,000.- p.m.	2	
Rs 10,001.- to Rs 15,000.- p.m.	3	
Above Rs 15,000.- p.m.	4	

41. ACCOUNT NO. OF WATER BILL            
(9 Fields)

42. NAME (If possible): .....

43. ADDRESS: ..... TEL. NO. ....

-----  
*Dear Sir/Madam,*

*Kindly rest assured that the information given by you will be treated confidentially.*

*Thank you very much.*

*(D. SOWDAGUR)*

REF:

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SONDAGE LOR LABITUDE CONSOMATEURTITRE: LABITUDE CONSOMATEUR PAR RAPOR  
AR DILO A MORISOBJECTIF: LETIDE AKADEMIKTOU INFORMATION POUR GARDE EN CONDIDENTIALITE*(Met √ ek rempli kot bizin)*

1. DÉPI COMBIEN TEMPS OU ENA ENNE PRISE DILO LOR OU NOM ?

MOIS	1-3	4 - 6	7 - 9	10- 12	> 12
√					

	Entière- ment d'accord	D'accord	Sans Opinion	Pas d'accord	Ditou Pas d'accord
2. MO FINE FAIRE APPLICATION POUR ENNE PRISE DILO PARSKI : <i>(Plis qui enne réponse possible)</i>					
2.1 Mo tipé gagne problème avec dimoune kot lequel mo tipé prend dilo.					
2.2 Mo finne éna mo propre lacaz.					
2.3 Mo fine éna assez cash pou prend enne Prise dilo.					
2.4 Mo ti envi éna enne prise pou moi kouma les zot.					
2.5 Mo famille ek banne kamarades finne dire moi pran enne prise dilo.					
3. MO FINE KONNER COMME SUIV KOT FAIRE APPLICATION POUR ENNE PRISE DILO: <i>(Plis qui enne réponse possible)</i>					
3.1 Mo ti déjà konné ki CWA responsab pou donne prise dilo.					
3.2 Mo fine dimandé dans biro CWA.					
3.3 Mo fine diman mo famille ek banne kamarades.					
3.4 A travers Mass Media, <i>(specifier qui media)</i> .....					
4. LI TI FACILE POU KONNER A KOT BIZIN ALLE FAIRE APPLICATION POUR ENNE PRISE DILO.					
5. KAN MO TI ALLE FAIRE APPLICATION DILO, BAN OFFICIERS CWA FINE RECEVOIR MOI BIEN.					

	Entière- ment d'accord	D'accord	Sans Opinion	Pas d'accord	Ditou Pas d'accord
6. L'ARGENT KI CWA TI RECLAME POU INSTALLE MO PRISE DILO: <i>(Enne sel réponse)</i>					
6.1 Li cher					
6.2 Li raisonable					
6.3 Li assez bon marché					
6.4 Li bon marché					
7. MO TI TROUVE LI FACILE POU DECIDER SI MO BIZIN ALLE DE L'AVANT POU PREND ENNE PRISE DILO					
8. ESKI A NIMPORTE QUEL MOMENT OU TI DECOURAGER POU ALLE DE L'AVANT AVEC OU APPLICATION PRISE DILO? <i>(D'accord/pas d'accord égal OUI/NON)</i> <i>(Si réponse neutre ou + ve laisse Q.9)</i>					
9. MO TI DECOURAGER PARSKI: <i>(Plis qui enne réponse possible)</i>					
9.1 Li ti trop cher					
9.2 Mo ti gagne problem pou pass tiyo Kot voisin.					
10. MO PAS TI DECOURAGER PARSKI: <i>(Plis qui enne réponse possible)</i>					
10.1 Mo ti éna assez l'argent					
10.2 Li plis bon ena mo prope prise dilo.					
10.3 Li plis bon mo kouma les zot.					
11. APRES OU APPLICATION ESKI A NIMPORTE QUEL MOMENT OU TI PENSE POU PREND DILO DEPI ENNE LOT PLACE, PAR EXEMPLE, KOT VOISIN, PARENTS ? <i>(D'accord/pas d'accord égal OUI/NON)</i> <i>(Si neutre ou + ve laisse Q.12)</i>					
12. FINALEMENT MO FINE DECIDE POU PREND DILO PARSKI: <i>(Plis qui enne réponse possible)</i>					
12.1 Mo ti obligé ena mo prope prise dilo ek mo ti ena l'argent.					
12.2 Mo ti obligé ena mo prope prise dilo ek. mo fine prend l'argent prété.					
12.3 Mo fine suivre conseille mo famille ek Kamarades.					
13. LES TEMPS KI CWA FINE PREND POU INSTALLE MO PRISE DILO LI TI LONGUE.					
14. MO POU CONSEILLE BAN CONSOMA- TEURS KI PAS ENA ENNE PRISE DILO POU PREND ENNE PRISE POU ZOT MEM.					
15. MO BAN BESOINS EN EAU BIEN SATISFAIT AVEC FOURNITURE DILO KOT MOI.					
16. FOURNITURE DILO KOT MOI LI SUFFISANT					

	Entière- ment d'accord	D'accord	Sans Opinion	Pas d'accord	Ditou Pas d'accord
17. MO TROUVE PRIX DILO DOMESTIK A MORIS LI: <i>(Donne enne seul réponse)</i>					
17.1 Cher					
17.2 Raisonable					
17.3 Assez bon marché					
17.4 Bon marché					
18. POU MOI QUALITE DILO ROBINET LI BON.					
19. MO POU ACCEPTER PAYE ENNE PRIX DILO PLIS FORT POU GAGNE:					
19.1 Enne pli bon service					
19.2 Enne pli bon qualité dilo					
20. MO CONSOMME DILO KI VAN DANS BOUTEILLE PLASTIK <i>(Enne sel réponse)</i>					
20.1 Très souvent <i>(Si 20.1, 20.2 ek 20.3 alle Q21)</i>					
20.2 Souvent					
20.3 Parfois					
20.4 Jamais <i>(Si réponse 20.4 laisse Q.21)</i>					
21. MO CONSOMME DILO KI DANS BOUTEILLE PLASTIK: <i>(Plis qui enne réponse possible)</i>					
21.1 Parski mo pas éna confiance dans qualité dilo CWA.					
21.2 Parski dimoune couma moi consomme dilo dans bouteille.					
21.3 Parski mo capave asseté dilo dans bouteille.					
21.4 Parski dilo dans bouteille li pratik.					
22. MO PAS CONSOMME DILO KI DANS BOUTEILLE PLASTIK PARSKI: <i>(Plis qui enne réponse possible)</i>					
22.1 Mo trouve qualité dilo CWA acceptable.					
22.2 Dilo bouteille donne dimoune enne grandeur ki artificiel.					
22.3 Dimoune coumma moi pas capave acheté li.					
22.4 Pour moi li pas veut dire nanrien .					
23. MO FINE DEJA FAIRE COMPLAINTE A LA CWA DANS LE PASSE <i>(Si pas d'accord laisse Q.24)</i>					
24. MO TI FAIRE COMPLAINTE A CWA PARSKI: <i>(Plis qui enne réponse possible)</i>					
24.1 Konte dilo ti fort.					
24.2 Dilo pas tipé coulé assez.					
24.3 Tiyo kot moi ti cassé.					
24.4 Tiyo lor simin ti cassé.					

	Entière-ment d'accord	D'accord	Sans Opinion	Pas d'accord	Ditou Pas d'accord
24.5 D'après moi compteur dilo pas ti bon.					
24.6 Mo pas ti satisfait avec employés CWA					
25. EN GENERAL CWA TI TRAITE MO COMPLAINTE DANS ENNE FASSON EFFICIENT.					
26. MO TROUVE LE TEMPS KI CWA TI PREND POU FINALISE MO COMPLAINTE TI RAISONABLE.					
27. MO TROUVE KI TRAVAILLEUR CWA:					
27.1 Zot courtois					
27.2 Zot aide dimoune					
27.3 Zot conne zot travail					
28. EN GENERAL MO TROUVE QUI:					
28.1 Fourniture dilo par CWA li suffisant					
28.2 Qualité dilo fourni par CWA li bon					

29. ESKI OU RAMASSE DILO KOT OU ?  
(Si NON, laisse Q 30)

1. OUI	2. NON

30. KOUMA OU RAMASSE DILO ?

Dans taink enbas/lor lacaz	1	
Dans récipients	2	
Autres (Specifier) .....	3	

31. EN MOYENNE COBIEN OU PAYE DILO PAR MOIS ?

Rs	
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32. EN MOYENNE COBBIEN DILO OU SERVI PAR MOIS ?  
(Interviewer bisin calculé)

	m <sup>3</sup>
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33. COBBIEN PERSONNES SERVI OU PRISE DILO?  
(Rempli l'espace)

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34. ESKI NORMALEMENT OU PAYE OU KONTE DILO DANS DELAI LEGALE DE SOIXANTE (60) JOURS ?

1. OUI	
2. NON	

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**INFORMATION DE BASE GENERALE**

(Met √ ek rempli kot bizin)

35. KI REGION OU HABITER ?

La Ville	1	
Village	2	

36. OU RELIGION/COMMUNAUTE ?

1. Hindu	2. Musulman	3. Sino Mauritian	4. Population Générale

37. OU LAGE ? (ANNEES)

1. 18 - 29	2. 30 - 39	3. 40 - 49	4. 50 - 59	5. 60 ou Plis

38. KI NIVO OU LEDUCASSION ?

<i>NIVO EDUCATION OU FINNE SUIVE</i>		
Pas di tou	1	
Nivo primaire	2	
Ziska '0' Level	3	
Ziska 'A' Level	4	
Nivo liniversité	5	

39. DANS QUI CAPACITE FIN EMPLOYE OU ?

Professionnel/Directeur/Technicien/Senior Officer	1	
Middle Management/Travailleur sales ek Biro/Commi ek Administrateur	2	
Zouvrier/Simple travailleur/Laboureur	3	

40. KI OU SALAIRE PAR MOIS ?

Moins ki Rs 4,000 p.m.	1	
Ente Rs 4,000.- ek moins ki Rs 6,000.- p.m.	2	
Ente Rs 6,000.- ek moins ki Rs 10,000.- p.m.	3	
Ente Rs 10,000.- ek moins ki Rs 12,000.- p.m.	4	
Rs 12,000.- p.m. ou plis	5	

41. KI NUMERO OU KONTE DILO            
(9 Fields)

42. NOM (Si possible): .....

43. ADRESSE: ..... TEL. NO. ....

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*Cher Missié/Madame,*

*Tou information ki finne donné pou traité avec confidentialité.*

*Merci boucoup.*

*(D. SOWDAGUR)*



MR D. SOWDAGUR  
ILOT, D'EPINAY  
TEL: 601-5025 (Office)  
243-3104 (Res. After 7.00 p.m)

Dear Sir/Madam,

SURVEY OF CONSUMERS

In the context of my University Study, I have to carry out a survey on Consumer Behaviour with respect to water in Mauritius.

I have chosen you to give me your opinions and advice on the Water Supply Service in Mauritius.

I should be grateful if you would reply to the few questions which will take a few minutes.

Please, kindly rest assured that the information you will give will be held in the strictest confidence and will be used for statistical purposes only.

Thanking you in advance,

Yours faithfully,

(D. SOWDAGUR)



## DISCUSSION GUIDE FOR FOCUS GROUPS

1. Your opinion on water supply in urban and rural areas ?
2. What is your feeling on people who do not have a water connection ?
3. Is it easy to have a water connection ?
4. Your opinion on the cost of a water connection ?
5. Your opinion on price of domestic water.
6. What do you know about the CWA ? How people come to know about the CWA ?
7. What is your feeling on the drinking quality of water in Mauritius ?
8. Do you think that religion or culture influence the consumption of domestic water in Mauritius ?
9. What factors according to you may influence the consumption of domestic water in Mauritius ?
10. What is your feeling on CWA workers ?
11. How do you view customer care by the CWA ?
12. What is telephone number **170** ? Your observation thereon
13. Is there wastage by CWA ? If yes, what is your attention towards it ?
14. Is CWA an efficient Organisation ?
15. What is your request and advice to the CWA?

