

CHAPTER 4 EMPIRICAL STUDY

This chapter presents the methodology used in the study which includes a description of the population and the sample. The measuring instruments used for data collection are discussed, focusing on their rationale, dimensions, validity, reliability and interpretation.

4.1 POPULATION AND SAMPLE

A population refers to all of the events, things, or individuals to be represented in the study (Christensen, 2001). The population of this research study consists of 3657 employees, being the total number of permanent employees in the organisation.

For the purposes of the empirical study a random sample was drawn. A random sample ensures that all members of the population have an equal chance to participate in the research study (Mouton & Marais, 1991). The systematic sampling technique was used for random sampling, which involves choosing the sample randomly from the existing employee population list or frame (Christensen, 2001).

A sample size of 400 employees was drawn, using the systematic sampling method. The respondents who fully completed their questionnaire during the group administration process were taken as the sample. As a result a sample size of 371 was obtained, which represents 10, 1 % of the total workforce population. The sample size of 10% is an adequate representation of the population (Baker, 1994).

The following descriptive statistics for the sample (N = 371) provide a profile of the respondents in terms of age, gender, population group, home language, highest qualification, tenure, position, job grade and department.

TABLE 4.1 FREQUENCY DISTRIBUTION: AGE

Age	Frequency	Percentage
Under 25 years	58	15.6
25 – 34 years	87	23.5
35 – 44 years	87	23.5
45 – 54 years	75	20.2
55 – 64 years	63	17.0
65 years plus	1	0.3
Total	371	100%

From table 4.1 it can be seen that the respondents between 25 to 34 years and 35 to 44 years have the same total of 23, 5%. While 20, 2% of the respondents are between 45 to 54 years old. The majority of respondents are aged between 25 and 54 years.

TABLE 4.2 FREQUENCY DISTRIBUTION: GENDER

Gender	Frequency	Percentage
Female	172	46.3
Male	199	53.7
Total	371	100%

According to the above table 53, 7% of respondents are males, while 46, 7% are females.

TABLE 4.3 FREQUENCY DISTRIBUTION: POPULATION GROUP

Population group	Frequency	Percentage
African	160	43.1
Asian	38	10.2
Coloured	79	21.2
White	94	25.5
Total	371	100%

It is evident from table 4.3 that the majority (43, 1%) of the respondents fall in the African population group with 25, 5% of the respondents in the white population group.

TABLE 4.4 FREQUENCY DISTRIBUTION: HOME LANGUAGE

Home language	Frequency	Percentage
Afrikaans	136	37.1
English	71	19.3
Ndebele	27	7.4
North Sotho	15	4.1
South Sotho	21	5.7
Swati	10	2.7
Tsonga	19	5.2
Tswana	4	1.1
Venda	12	3.3
Xhosa	21	5.7
Zulu	31	8.4
Total	371	100%

Table 4.4 indicates that the majority of respondents are Afrikaans (37, 1%) or English (19, 3%) speaking.

TABLE 4.5 FREQUENCY DISTRIBUTION: QUALIFICATION

Qualifications	Frequency	Percentage
Std 6 or below	23	6.3
Std 8 and 9	30	8.2
Std 10	154	42.0
Diploma/Degree	139	37.9
Postgraduate Degree	21	5.7
Total	371	100%

From the table 4.5 it can be seen that 42.0% of the respondents have a matric qualification, while 37, 9 % of the respondents have either a diploma or degree qualification. Only 5, 7% of the respondents have a postgraduate degree qualification.

TABLE 4.6 FREQUENCY DISTRIBUTION: TENURE

Tenure	Frequency	Percentage
1 year	31	8.4
Between 1 – 5 years	75	20.2
Between 5 – 10 years	101	27.2
Between 10 – 20 years	137	36.9
Over 20 years	27	7.9
Total	371	100%

Table 4.6 indicates that 36, 9% of the respondents have between 10 and 20 years of service with the company. A total of 27, 2% of the respondents have been in the company for a period between 5 and 10 years, whereas 20, 2% of the respondents have between 1 and 5 years of service. The majority of respondents therefore have between 10 and 20 years service in the company.

TABLE 4.7 FREQUENCY DISTRIBUTION: POSITION

Job level	Frequency	Percentage
Senior Management	20	5.4
Management	79	21.3
Operations Staff	272	73.3
Total	371	100%

As shown above, the majority (73, 3%) of the respondents are operations staff. Only 5, 4% of the respondents are in senior management positions, whereas 21.3% are in management positions.

TABLE 4.8 FREQUENCY DISTRIBUTION: JOB GRADE

Job grade	Frequency	Percentage
Hourly	178	48.0
Salaried	193	52.0
Total	371	100%

This table shows that 52% of the respondents are in the salaried job grade, while 48% of the respondents are in the hourly job grade.

TABLE 4.9 FREQUENCY DISTRIBUTION: DEPARTMENT

Department	Frequency	Percentage
Assembly	38	10.3
Body-shop	33	8.9
Corporate communication	26	7.0
Finance	18	4.9
Human resources	19	5.1
Legal services	23	6.2
Marketing	35	9.5
Paint-shop	48	13.0
Purchasing	35	9.5
Service centre	47	12.7
Technical	48	13.0
Total	371	100%

Table 4.9 above shows that most respondents work in the company's Technical department (13%), Paint-shop (13%) and Service Centre (12, 7%).

4.2 MEASURING INSTRUMENTS

The measuring instruments used for data collection in this study are the Organisational Culture Questionnaire (OCQ) and the Organisational Commitment Scale (OCS). These questionnaires are considered relevant and applicable to the study.

4.2.1 Organisational Culture Questionnaire (OCQ)

The following discussion explores the rationale, purpose, administration, interpretation, validity, reliability and motivation for the OCQ.

4.2.1.1 Rationale and purpose

The rationale of using the OCQ is mainly to measure the current and preferred dimensions of organisational culture. Most dominant, dominant and least dominant cultural orientations are measured based on the current and preferred perceptions of organisational members (Harrison & Stokes, 1992). Harrison (1993, p 9) indicates that OCQ is a questionnaire developed to “diagnose culture in an organization, in order to identify the different cultural orientations and initiate culture change strategies”.

4.2.1.2 Dimensions of the OCQ

The questionnaire consists of 60 items and measures four dimensions of organisational culture which are achievement, power, role and support cultures (Harrison, 1993). Each of these dimensions has 15 items or structured questions

to measure it. The following is a detailed description of the four dimensions:

❖ **Power culture dimension (15 items)**

This dimension measures the organisational member's perception on how strength is used in organisational processes to ensure direction, decisiveness and determination.

❖ **Role culture dimension (15 items)**

It indicates the way in which structure is being perceived by organisational members as a means to maintain order, stability and control in organisational processes.

❖ **Achievement culture dimension (15 items)**

Achievement oriented dimension measures perceptions of organisational members on how competence is used in order to enhance growth, success and distinction in organisational processes.

❖ **Support culture dimension (15 items)**

This dimension measures perceptions of organisational members on how relationships are used in organisational processes to ensure mutuality, service and integration.

4.2.1.3 Interpretation

A four-point Likert-type scale is used for rating both the existing and preferred responses of the questionnaire. The ratings are defined as follows:

- | | | |
|---|---|--|
| 1 | = | Least dominant view or least preferred alternative |
| 2 | = | Dominant view or preferred alternative |
| 3 | = | Next dominant view or preferred alternative |
| 4 | = | Most dominant view, or preferred alternative |

4.2.1.4 Administration

The OCQ is a self-administered questionnaire. It also provides clear instructions for its completion. The items are structured in a statement format with a rating scale for each statement. Respondents rate statements based on their observations of the different culture dimensions within their organisation.

Questionnaires with incomplete or multiple ratings were discarded. Only completed questionnaires were considered for the study.

4.2.1.5 Reliability and validity of the OCQ

Studies on the reliability of this questionnaire indicate that it is a reliable measuring instrument for diagnosing organisational culture (Harrison, 1993).

According to Harrison (1993, p 27) “the reliabilities of the four dimensions of the organisational culture questionnaire, calculated by the Spearman-Brown formula are for achievement 0.86, power 0.90, role 0.64 and support 0.87”. The overall reliability of the questionnaire is 0.85 (Harrison, 1993).

There is evidence of construct validity which is the ability of the questionnaire to vary concurrently with other measures, which on theoretical grounds should reflect the same underlying attitudes and values (Harrison, 1993).

Janz in Harrison (1993) conducted a comparative study between diagnosing organisational culture questionnaire and his questionnaire called Culture Index.

Table 4. 10 below indicates the correlations between dimensions of both the organisational culture questionnaire and cultures index questionnaire, which confirms that they both measure similar attitudes and values on organisational culture.

TABLE 4.10 CORRELATION RESULTS (Harrison, 1993)

Diagnosing Organisational Culture Questionnaire	Culture Index Questionnaire			
	Values	Power	Rules	Index
Power	-0.7	0.79	0.01	-0.8
Role	0.19	-0.47	0.40	0.29
Achievement / Task	0.69	-0.69	-0.38	0.83
Support / People	0.41	-0.68	-0.46	0.69
<i>Note: p<.05 if r<.3, and p<.01 if r<.41</i>				

This indirect evidence of the validity of the diagnosing organisational culture questionnaire, suggests that the questionnaire shows respectable reliability and validity.

4.2.1.6 Motivation for using the OCQ

The organisational culture questionnaire was chosen for this study because of the following reasons as indicated by Harrison (1993, p 4):

- ❖ It provides a non-threatening way to surface and begin dialogue about participants' experiences with the values and management practices of their organisation.
- ❖ The organisational culture questionnaire has the advantage of being based on a simple model that participants' at all organisational levels, will intuitively understand.
- ❖ It has high face validity in that respondents feel the scores reflect their experiences of the existing and preferred organisational culture.

4.2.2 Organisational Commitment Scale (OCS)

The following discussion explores the rationale, purpose, administration, interpretation, validity, reliability and motivation for the OCS.

4.2.2.1 Rationale and purpose

Organisational Commitment Scale was developed with the aim of measuring organisational commitment as a tri-dimensional construct (Meyer & Allen, 1997). Meyer and Allen (1997, p 116) highlight that “the scale is intended to measure three components of organisational commitment: affective, continuance and normative commitment”.

4.2.2.2 Dimensions of OCS

The OCS is a questionnaire which consists of 24 structured statements or items, measuring affective, continuance and normative dimensions of organisational commitment (Meyer & Allen, 1997). This scale has 24 structured questions or items, 8 items per dimension.

The following is a detailed description of the dimensions:

❖ Affective commitment dimension (8 items)

This dimension measures organisational members’ emotional attachment to, identification with and involvement in the organisation. Affective dimension means that members stay in the organisation because they want to do so.

❖ Continuance commitment dimension (8 items)

The continuance dimension measures organisational members’ commitment to the organisation based on the costs that are associated with leaving the organisation. In other words, members whose primary link to the organisation is

based on continuance commitment remain because they need to do so.

❖ **Normative commitment dimension (8 items)**

This dimension measures organisational members' feelings of obligation to remain with the organisation. Normative commitment implies that members remain in the organisation because they ought to.

4.2.2.3 Interpretation

A seven-point Likert-type scale is used for respondents to rate their responses. The ratings are defined as follows:

- | | | |
|---|---|---------------------------|
| 1 | = | Strongly disagree |
| 2 | = | Moderately disagree |
| 3 | = | Slightly disagree |
| 4 | = | Neither agree or disagree |
| 5 | = | Slightly agree |
| 6 | = | Moderately agree |
| 7 | = | Strongly agree |

Negatively worded item responses were reversed, in order to accurately score the responses (Meyer & Allen, 1997). The numbered responses for the appropriate items are summed, after the items have been reversed.

4.2.2.4 Administration

The organisational commitment scale is self-explanatory and is completed individually by respondents. Supervision is not necessary. The questionnaire provides clear instructions as to its completion. Respondents mark their rating of each item on the questionnaire itself.

4.2.2.5 Reliability and validity of the OCS

The reliability estimates of this scale are internal consistency and temporal stability. Meyer and Allen (1997, p 120) found the internal consistencies of the OCS dimensions “varying between 0.85 for affective, 0.79 for continuance and 0.73 for normative”. The overall reliability estimates exceed 0.70 (Meyer & Allen, 1997).

Meyer and Allen (1997) found that the correlation between the OCS and antecedents variables provide evidence that the scale is a valid measure of organisational commitment and it can be used for future research.

Construct validity of the dimensions of the OCS is based on the fact that they correlate as predicted with the proposed antecedents’ variables (Meyer & Allen, 1997). This provides preliminary evidence that the OCS is a valid measure of organisational commitment.

4.2.2.6 Motivation for using the OCS

The contents of the OCS are applicable to this research study. The researcher regarded the OCS as the most suitable measure of organisational commitment, based on the items and sub-scales that are measured in this study.

4.3 DATA COLLECTION

The data collection process entails procedures being followed by the researcher for gathering data (Huysamen, 1994).

The following data collection procedure was followed:

- ❖ A covering letter was attached to the questionnaire, explaining the aim of the study, confidentiality of responses and instructions for completing the questionnaire.
- ❖ A questionnaire on bibliographical information was included, containing questions on the variables: age, gender, department, years of service, job level, highest qualification, race and job grade.
- ❖ The OCQ and OCS were distributed to all respondents in the sample.
- ❖ Respondents completed questionnaires anonymously during group administration and they were collected immediately after completion by the researcher.

4.4 DATA ANALYSIS

The statistical analysis for quantitative data was carried by means of the Statistical Package for Social Sciences (SPSS 11.5).

4.4.1 Frequency distributions

Tredoux and Durrheim (2002, p 28) states that “one of the main reasons why we construct frequency distribution is to describe the distribution of score on a variable”. The biographical and organisational questions are categorical in nature, thus the responses to such questions are presented in frequency distributions.

The respondents’ perceptions of the existing and preferred organisational culture dimensions were categorised in the following manner:

- ❖ Least dominant
- ❖ Dominant
- ❖ Most dominant

The frequency distributions were used to present the respondents' perceptions of the existing and preferred organisational culture dimensions, based on the above-mentioned categories.

4.4.1 Means and standard deviations

The mean is defined by Christensen (2001, p 329) as the “arithmetic average of a group of numbers”. Its main advantage is that the sample mean is in general a better estimate of the population mean (Tredoux & Durrheim, 2002).

Christensen (2001, p 330) describes a standard deviation as a “measure of the extent to which a group of scores vary about their mean”. A small standard deviation indicates that the scores cluster closely around the mean whereas a large standard deviation indicates that the scores deviate considerably from the mean (Christensen, 2001).

The means and standard deviations for all the dimensions of organisational commitment are included in the empirical study.

4.4.3 Analysis of variance

The mean scores are compared using the analysis of variance or ANOVA. Tredoux and Durrheim (2002, p 254) describe ANOVA as “a test used to test for differences between the means of more than two groups, and can be used in designed with more than one independent variable”. The categories of the independent variable organisational culture which are least dominant, dominant and most dominant are used as basis for the subdivisions into groups.

The major independent variables of this study, for the purpose of the ANOVA's are the following dimensions of organisational culture:

- ❖ Achievement culture
- ❖ Power culture
- ❖ Role culture
- ❖ Support culture

The dependent variables for each ANOVA are the following dimensions of organisational commitment:

- ❖ Affective commitment
- ❖ Continuance commitment
- ❖ Normative commitment

Christensen (2001, p 338) defines a one-way analysis of variance as “a statistical test for analysing data collected with a simple randomised design”. In this study only the one-way analysis of variance was conducted.

4.4.4 Level of statistical significance

A significance level is a statement of the probability that an observed difference is a chance difference (Christensen, 2001). The most commonly used significance levels are 0.05 and 0.01 (Tredoux & Durrheim, 2002).

Christensen (2001, p 336) states that “if the 0.01 significance level is selected, then the difference can be expected to occur only 1 time in 100 by chance”. Only the 0.01 significance level was applicable for this study.

4.5 FORMULATION OF HYPOTHESIS

A research hypothesis has to be formulated regarding the relationship between organisational culture and organisational commitment in order to allow the empirical testing of the relationship between these two variables.

The following research hypothesis addresses the objectives of this study:

- ❖ H_{01} : There is no relationship between organisational culture and organisational commitment.
- ❖ H_0 : There is a relationship between organisational culture and organisational commitment.

The research hypothesis will be tested by analysing the relationship between organisational culture dimensions and organisational commitment dimensions.

4.6 CHAPTER SUMMARY

In this chapter the population and sample were described, the research instruments, and the data gathering and data analysis processes were discussed. The chapter concluded with the formulation of the research hypothesis.

The next chapter presents the results of the empirical research.