1. CHAPTER 1: INTRODUCTION

1.1. A Brief History of Women's Rights

Since the beginning of time women have been subjected to the legal guardianship of their fathers or husbands (Hecker, 2004). Women were not allowed access to education or ownership of any property. In certain cultures even a women's life was in her husband's hands. Women were traded like cattle and treated like property with little respect and no rights (Hecker, 2004).

It was through women's movements, picketing, striking and other means that women forced a change in their conditions. Women had to fight for change to happen including access to equal education, voting rights, the right to own property and to economic trade, equal pay, the right to use birth control and the right to access any job they so choose (DuBois, 1998). It was a long and hard struggle and the women in each country had to fight their own system. They were up against powerful and influential men including doctors and politicians. In his 1873 essay Dr. Edward H. Clarke, a Harvard medical graduate and the Librarian of Congress, wrote that too much education robs the so-called more important female reproductive organs of the blood they need by channelling it to the brain. This was a mere 133 years ago.

New Zealand was the first country to allow women the right to vote (1893) followed shortly by Australia (1901) (The Columbia Electronic Encyclopedia, 2003). On 26 August 1920 the United States Congress amended the Constitution to follow suite and The British government did the same in 1928 (The Columbia Electronic Encyclopedia, 2003). In 1931 white women earned the right to vote in the then Apartheid South Africa (United Nations, 1992). Since then things have changed dramatically. There are currently 131 women holding Parliamentary seats in South Africa (out of 400 seats total) (International Marketing Council of South Africa, 2004). This is 32.8%, which ranks South Africa as number 11 on the global ranking of women in Parliament. Rwanda still leads at 49% (International Marketing Council of South Africa, 2004).

The most recent victory for women was the 2006 election of Chile's first female president, Michele Bachelet, but she was by far not the first female president the world has ever seen. In 1960 Sirivamo Bandaranaike of Sri Lanka became the world's first female elected Premier Minister and in 1974 Isabel Perón of Argentina became the first woman President (Lewis, 2005). Women in Islamic countries are however still not allowed to vote.

The struggle however, is not over until all forms of gender discrimination and inequality have been eradicated. It is difficult and time consuming to remove generations of oppression and submission. One of the issues that still need to be eradicated is that of gender segregation in the labour markets. There have been thousands of studies conducted over the last century to explain the perseverance of the phenomenon. Women have access to the same education, are encouraged to study anything they want and have legal backing from government to prevent discrimination and promote equal opportunity and pay, but still gender segregation persists.

In South Africa little research has been done on the topic and most have concentrated on the vertical element of gender segregation with organisations such as the Business Women's Association of South Africa (BWASA) conducting an annual census of female directors serving on the Board of Directors of all the JSE listed companies and of female leaders in government divisions (Businesswomen's Association of South Africa, 2006). Other reports use the latest census or labour survey data to report on the statistics and trends of the phenomenon, but not much has been done to investigate the reasons behind the phenomenon.

In Western cultures many possible theories for the existence of the phenomenon had been created and tested, but these explanations are not necessarily applicable in the South African context. South Africa faces unique contextual challenges that need to be considered. These Western derived theories have however been tested in North African countries and also in Eastern countries with some success. It is probably more practical to start the South African studies by testing the relevance of the Western theories, before simply discarding them or

creating new ones. This will help researchers better understand how the South African context differs from the Western world and why the theories do or do not serve as explanations of gender segregation in the South African context.

1.2. Introduction to Occupational Gender Segregation as a Concept

Edward Gross (1968) first introduced "sex segregation" as a phenomenon to Sociology and described it as the concentration of certain genders in certain occupations. Blackburn, Browne, Brooks & Jarman (2002) postulates that "Overall segregation" consists of vertical and horizontal components of which only the vertical component is a measure of inequality (see Figure 1.1). According to Blackburn et al (2002: 513) "occupational gender segregation" refers to "the tendency for men and women to work in different occupations", i.e. horizontal segregation. Vertical segregation in turn refers to the "concentrating individuals in the lower echelons of an organisation" (Miller, Neathey, Pollard & Hill, 2004, 12).

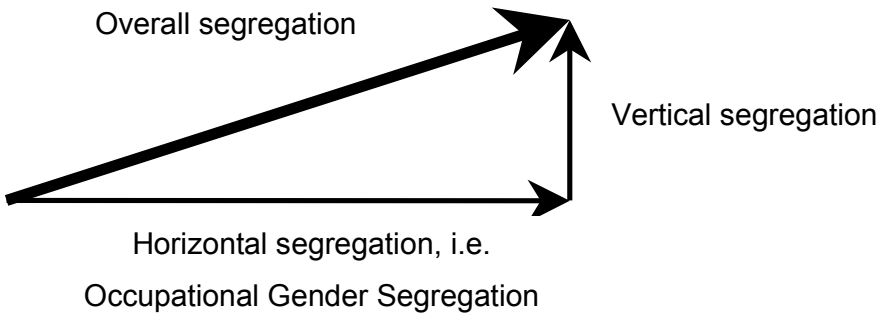

Figure 1.1: The components of segregation

Source: Blackburn et al, 2002.

The ideal is that if women form 46% of the labour market (Statistics South Africa, 2005) then they should also form 46% of all occupations. This however is not the case and occupational gender segregation continues to exist across the world countries, but in varying degrees with some countries taking proactive steps to eradicate the phenomenon, e.g. the United Kingdom's Equal Opportunity Commission and the Women and Equality Unit.

Over the years many theories have been proposed to explain the phenomenon of gender segregation. Reskin (1993) differentiates between demand-side and supply-side theories, but cautions that factors exist that can influence both sides. Demand-side explanations, such as patriarchy and employers' practices and discrimination, focus on how decisions of others, e.g. organisations and other individuals influence gender segregation, while supply-side theories focus on worker choices (Reskin, 1993).

Supply-side explanations emphasise employees' actions and subsequent influence on gender segregation. According the Reskin and Roos (1990) the supply of qualified workers of each gender limits the occupations' gender composition. The supply of educated women in a labour market is negatively related to its level of gender segregation (Jones & Rosenfeld, 1989). It is thus assumed that women "supply" themselves to certain occupations and not to others. These career decisions are based on the individual's "preferences".

1.3. The Problem Statement, Research Question and Objectives

The purpose of this study is to investigate how genders are segregated across the functional occupational fields, i.e. Human Resources, Finance, Marketing and Sales, Procurement or Buying (including Logistics), General Management, Information Technology, Research and Development and Operations or Production.

The study will further investigate the "supply-side" reasons behind the phenomenon through an attitudinal survey of the females in the sample.

The Research question is as follows:
What is the nature and degree of occupational gender segregation across the functional fields in South Africa and do the existing supply-side explanations serve to explain the phenomenon?

The study objectives are as follows:

- To what extent does occupational gender segregation exist across the eight functional fields?
- Do the existing supply-side explanations serve to explain occupational gender segregation in South Africa?

1.4. Scope and Limitations of the Study

The study will be conducted on a group of first year MBL students from the Gauteng province, i.e. a convenience sample. This might adversely affect the sample's representativeness, as it is not a random sample. An argument could be made that the "type" of individual who enrol for MBL is likely to be a strong, confident and well-educated leader and will answer the survey questions pertaining to the reasons for choosing functional fields differently than would another level of employee.

As previously mentioned only horizontal segregation will be investigated. This presents a limitation as women may be represented in certain functional fields, but their representation may be mostly at lower levels compared to their male counterparts. This is a problem in its own right, which should also be investigated and addressed, but falls outside the scope of the study.

The high level of aggregation is a further limitation in that it does not allow detailed investigation into the segregation of a field. Generally the more disaggregated the occupations being investigated, the higher the levels of segregation (Watts, 1998). It also limits comparison to the work of other researchers in the field, as their aggregations levels might be vastly different.

Due to time and space constraints, demand-side explanations for gender segregation, i.e. the decisions and actions of others, fall outside the scope of this study. This is also due to the degree of difficulty involved in sourcing data that might point to discrimination by organisations, their employees and their processes.

The supply-side explanations for gender segregation that will be tested in this research originate from Western countries such as Europe and the United States of America. Over the years research originating from Asia, Australia and North Africa has held these general explanations as true, but it has not been tested in South Africa. The South African context might have inherent differences, such as history, culture and religions, which render these foreign explanations inappropriate. The search for and testing of alternative contextual explanations fall outside the scope of the study, but should be kept in mind.

Another identified limitation is that the study will only be done from a female perspective and the results can thus not be generalised to males. The study will also not investigate occupational gender segregation across races. Such a study will probably show major differences between the different ethnic groups, but falls outside the scope of the study.

This study is also limited in that the issue of culture and its influence on gender segregation will not be investigated. It can be expected that culture will have a major influence on some of the supply-side explanations being studied. In certain cultures, such as the Muslim community for example, parental influence on career choice should prove relatively strong. Women's familial and child bearing responsibilities might also be much more important in some cultures than others. South Africa consists of a multitude of cultures, which also differ from region to region. A duplication of the study in another region will probably present different results.

1.5. Importance of the Study

Anker (1997) states gender segregation as being a major source of labour market rigidity and economic inefficiency, i.e. it wastes human resources and reduces an economy's ability to adjust to change. He goes on to say that it negatively effects the way men view women and how women then view themselves and subsequently affects women's status, both socially and economically.

According to a report generated by the United Kingdom's Equal Pay Task Force (2001), there are three main reasons for the existence of the gender pay gap, i.e. discrimination, family responsibilities and occupational segregation. The traditional female occupations are generally those with lower salaries, less benefits and lower status, which perpetuates the gender pay gap and makes women more vulnerable to repeat unemployment than men (Kilbourne, Farkas, England, Weir & Beron, 1994; Lee & Woolard, 2003). Furthermore, female-dominated occupations provide fewer opportunities for training and formal mobility (Li, Buchmann, Konig & Sacchi, 1998). To overcome these issues, women will have to consider male dominated occupations.

In occupations where women constitute a small proportion, their representation at higher levels are almost non-existent, exacerbating the glass ceiling phenomenon (Miller et al, 2004). According to Reskin, McBrier and Kmec (1999) occupational gender segregation facilitates and perpetuates discrimination against women. Reskin (1993) states that the characteristics on which segregation is based represents the dominant or subordinate status and becomes the basis for discrimination or differential treatment. It thus affects how women are viewed and treated and in turn how they view and value themselves.

The lack of explicit recognition of occupational gender segregation as a problem is likely to lead to the reinforcement of traditional gender division and continued occupational gender segregation. This study will prove the existence and strength of the phenomenon as a starting point for recognising the problem. It will further investigate what women base their career decisions on, i.e. the supply-side reasons behind the phenomenon. Only once we understand the causes can we find appropriate solutions.

1.6. Outline of the Research Report

Chapter 2 will review the current body of literature on gender segregation with specific focus on the measurement techniques and in depth discussion of the various theories under the demand-side and supply-side categories. In many cases there are articles in support of and against the theories and both points of view will be investigated.

The world trends in gender segregation will also be discussed with specific focus on the explanations for the differences in cross-national gender segregation. The literature review will end with a discussion of the South African context and the unique circumstances we face that might influence our gender segregation statistics and causes.

In Chapter 3 the sampling methodology and data collection methods and tools will be discussed and the results of the study will be presented in Chapter 4. The results will focus on each explanation type being investigated as well as the descriptive statistics of the data. This will be followed by statistical testing of the various hypotheses stipulated in 1.4. The study draws to an end with a discussion of the results in Chapter 5 including the main conclusion and recommendations for further research.

2. CHAPTER 2: LITERATURE REVIEW

2.1. Measurement of Occupational Gender Segregation

As the first objective of this study is to actually measure the phenomenon of occupational gender segregation, it is appropriate to start with a review of the literature on the various measurement techniques. Although much research has been conducted on the topic of occupational gender segregation the issue of how to best measure segregation remains a problem. Different measurement types make comparisons between different researcher's findings very difficult. The type of gender segregation research will determine the choice of measurement index. Most researchers wish to measure the phenomenon over time or across countries, which pose their own inherent mathematical complications. The measurement index chosen should satisfy four key conditions, i.e. organisational equivalence, size invariance, gender symmetry and the principle of transfers in its weak form (Watts, 1998).

Organisational equivalence is achieved if the index is unaffected by aggregating or segregating occupations with the same gender composition. Size invariance means that the index should be unaffected by the population or sample size. Gender symmetry refers to the index being unaffected when replacing female data with corresponding male data and visa versa. Lastly the principle of transference refers to the capability of the index to change when one individual moves from occupation to occupation (Watts, 1998).

Two other conditions are also regularly referred to, i.e. occupation invariance and composition invariance. Watts defines composition invariance as "the invariance of the index, following uniform changes in the number of males and females in each occupation reflecting the overall, but typically unequal, percentage changes in male and female employment" (1998, 490) and occupations invariance as "the measure of segregation be[ing] invariant to changes in the relative size of occupations if the gender composition of these occupations remains constant" (1998, 490). Watts (1998) further argues that both of these criteria are crucial for over time analysis.

There are three main indices to choose from, i.e. Index of dissimilarity (1955), Charles' structural index (1995) and the Karmel and MacLachlan Index (1988). Each of these three indices will be discussed in detail. All of these indices range from 0 to 1 with one representing total segregation and zero representing total integration. According to Reskin (1993) the limit for designating an occupation a sex typed, i.e. either male or female dominated, is arbitrary, but usually selected at about 75% to 80% of the total employment in the occupation.

2.1.1. Charles' Structural Index (A)

Charles' structural index (Charles & Gursky, 1995), represented by "A", has very complicated log-multiplicative computations and uses the following formula:

$$A = \exp\left\{\left|\frac{1}{n}\sum_{j=1}^{n}\left[\ln\left(\frac{F_j}{M_j}\right) - \left\{\frac{1}{n}\sum_{j=1}^{n}\ln\left(\frac{F_j}{M_j}\right)\right\}\right]^2\right|^{\frac{1}{2}}\right\}$$, where:

F_j = the number of females in the *j*th occupation; and

M_j = the number of males in the *j*th occupation.

The index is gender symmetric and exhibits occupational invariance, but is highly sensitive to the degree of occupational disaggregation (Watts, 1998). It therefore does not achieve organisational equivalence. It further aims at equal distribution of the genders without regard for the gender composition of the labour market (Watts, 1998). It is however, both occupations invariant and composition invariant.

2.1.2. The Index of Dissimilarity (D)

The index of dissimilarity or "index of segregation" (Duncan and Duncan's, 1955), represented by "D", is calculated by the following formula:

$$D = (1/2)\sum_j \left|(F_j/F) - (M_j/M)\right|$$, where:

F_j = the number of females in the *j*th occupation;

M_j = the number of males in the *j*th occupation;

F = the total female employees; and

M = the total male employees.

This index satisfies all four above-mentioned criteria, i.e. organisational equivalence, size invariance, gender symmetry and the principle of transfers in its weak form. It is for this reason as well as its long-standing use that the index remains the most popular and widely used, regardless of criticism against it (Taylor, Gorard & Fitz, 2000).

"D" represents the share of either group that must be removed, without replacement, to achieve perfect integration, i.e. D = 0 (Watts, 1998). It is based on this fact that Watts (1998) claims that this index is faulty because it fails to replace the removed workers and results in a gender distribution that does not represent the initial occupational structure. It achieves occupations invariance, but not composition invariance and is thus inappropriate for measuring trends over time. Preston (1999) cautions that the index will increase at lower levels of aggregations, which makes comparisons difficult.

2.1.3. The Karmel and MacLachlan Index (I)

The Karmel and MacLachlan index (Karmel & MacLachlan, 1988), represented by "I", is calculated as follows:

$$I_P = \left(\frac{1}{T}\right)\sum_{j=1}^{n}\left|F_j - a\left(M_j + F_j\right)\right|$$, where:

F_j = the number of females in the *j*th occupation;
M_j = the number of males in the *j*th occupation;
T = the total employment; and
a = the female share of total employment.

I_p represents the total employment that has to move, with replacement, to achieve total integration while maintaining the occupational structure and the gender share of the labour market. It is due to the latter that Watts (1998) suggests this as a better alternative than the index of dissimilarity. The "I" index also satisfy all four criteria, i.e. organisational equivalence, size invariance, gender symmetry and the principle of transfers in its weak form. The index also has a simpler interpretation than the "D" index (Watts, 1998).

Although the "I" index is neither composition invariant nor occupations invariant, it can be decomposed into composition effects and mix effects. The composition effects are composition and occupations invariant and can thus be used for trends over time analysis. Jacobs (1993) however, argues that the Karmel and MacLachlan index does not allow for valid cross-sectional or cross-country comparisons because it is sensitive to the gender structure of each labour force.

2.2. Demand-side Explanations of the Phenomenon

Although this study does not cover the demand-side explanations of gender segregation it is important to be thoroughly aware of them as they also play a role in gender segregation. As previously discussed the demand-side explanations refer to how decisions and actions of others, e.g. organisations and society, influence segregation levels. Therefore, it is theorised that factors, external to the individual, forces gender segregation regardless of the individual's preferences.

2.2.1. Patriarchy

Patriarchy is a feminist approach referring to male dominance in a society (Blackburn et al, 2002). As an explanation of gender segregation it postulates that men purposefully exclude women from power, control and the better jobs (Walby, 1990). Interestingly there is no country where women have gained equal access to power, measured by the UN's Gender Empowerment (GEM) (Blackburn et al, 2002). Blackburn et al (2002) criticises this theory for being a circular description rather than an explanation and that historically women wanted their husbands to be the sole breadwinner while they tended to the home.

2.2.2. Cultural and religious restrictions

Hofstede (2001, 9) defined culture as "the collective programming of the mind that distinguishes the members of one group or category of people from another". He postulates that various factors interact to shape a culture, such as history, religion, politics, economics, legislation, geography, technology etc., and that culture is highly enduring and changes very slowly if at all.

Cultural and religious restrictions on women's freedom contribute to the establishment of the notion of acceptable work for women. In certain societies women are forbidden from performing certain jobs. In Muslim countries for example women are forbidden to interact with unknown men in public and can thus not accept sales occupations unless the clientele are all female (Anker, 1997). If they decide to do so they are subjected to social sanctions such as rude remarks and harassment.

Christianity however, is not free from gender biases and is often seen as a patriarchal religion with God being male and Eve being made from Adam's rib to be his companion, which has for many years been interpreted as Eve's inferiority and subordination (Takahashi, 2000). It was also Eve who committed the "original sin" and seduced Adam into eating the forbidden fruit. Genesis 3:16 contain the "divine curse" of women and ends with "and he [your husband] shall rule over you.". These types of statements are not restricted to the Old Testament, but also appear in the New Testament. The following scriptures are but a few that have been used to ensure the subordination of women:

Colossians 3:18: "Wives, submit yourselves unto your own husbands, as it is fit in the Lord."

Ephesians 5:22: "Wives, submit to your husbands as to the Lord."

1 Corinthians 14:34: "Let your women keep silence in churches: for it is not permitted unto them; but they are commanded to be under obedience, as also sayeth the law."

Until very recently women were excluded from leadership roles in the church context, but women's rights and women's roles in the church are changing. Christianity has thus had their fair impact on society, culture and on gender segregation (Takahashi, 2000).

Manda (2001) paints a very bleak picture of a patriarchal society where our quest for gender equality requires us to discard most of our culture as men created our culture with little consultation from women and that patriarchy is consequently imbedded in most cultural values and beliefs.

2.2.3. Employer preferences, discrimination and practices

Employer preferences and discrimination refers to employers' aversion towards one gender or their affinity towards another that is unrelated to individual performance (Reskin, 1993). Employers believe that differences exist between the genders which make one gender less suitable for employment (statistical discrimination). This can refer to participation in the company in general or to specific occupations within the company. An employer's preference is translated into their recruitment practices, either internally or externally to ensure that they employ the "most suitable" employees. Reskin & Roos (1990) refers to a "labour queue" which is a rank order for hiring preferred employees.

Jacobs (1989) introduced the "revolving door" metaphor to symbolise women's entry into male-dominated occupations and subsequent exit due to "coercive forces" within those occupations. These "coercive forces" are glass ceilings and hostile environments, which forces the women to abandon the position and move to friendlier areas (Epstein, Fuchs, Seron, Oglensky & Sautè, 1999).

The research of Bygren and Kumlin (2005) indicate that the most important factor in maintaining occupational gender segregation in a company is the existing gender segregation in the occupations for which the company is recruiting personnel. They also showed that large or growing companies tend to use gender preferences less often in their recruitment policies.

Employee preferences are however influenced by other factors, such as demand for workers. An inadequate supply of qualified employees of a certain gender in the labour market will force employees to fill the position with the opposite gender (Brinton, Lee & Parish, 1995). Economic pressures may also influence recruitment decisions in that employers try to fill their positions with the cheapest qualified candidates. Females' lower pay rates should therefore benefit them in this regard (Reskin & Roos, 1990).

An employer's personnel practices can also influence segregation without being discriminatory. If the company follows a practice of filling positions from the internal labour market they might preserve existing levels of segregation (Jonung, 1998). Informal communications of an available position also perpetuates segregation due to social networks being segregated, while formal recruitment procedures facilitate integration (Fernandez & Sosa, 2005).

Other factors influencing segregation within firms are size, growth rate, staff turnover and inertia. The larger firms also have more pressure to attend to their segregation levels from female employees and external special interest groups (Reskin & McBrier, 2000). Empirical research indicates that the more bureaucratic and formalised the recruitment policies of an organisation are, the lower the sex segregation in the occupations (Reskin & McBrier, 2000).

The Constitution of the Republic of South Africa, adopted in 1996, specifically prohibits discrimination based on gender and condemns these demand-side practices. Similar litigation in other countries serve the same purpose. Furthermore, research conducted by Snipes, Oswald and Caudil (1998) suggests that recruitment biases are in the process of changing and contributes to gender segregation in a small degree.

This study will therefore ignore demand-side explanations and assume that occupational gender segregation exist due to the decisions made by individuals about their careers. It must however, be understood that the demand-side issues stated above also affect career-decisions (Perry, Davis-Blake & Kulik, 1994).

2.3. Supply-side Explanations of the Phenomenon

The second objective of this study is to test the relevance of the existing supply-side explanations of gender segregation. As previously discussed supply-side explanations refer to why and how individuals make their occupational decisions.

The following is a list of factors, derived from various sources, which influence the individual's career choice:

- Perceptions of sex-role stereotyping of occupations
- Self-efficacy
- The Human Capital theory
- Parental influence
- Teaching style and Career advice
- Self-Image, Exchange utility and Reward

These are the factors that will be studied in this research to determine if they are important decision criteria. Each of these factors will now be examined in more detail.

2.3.1. Perceptions of Sex-Role Stereotyping of Occupations

"An occupational stereotype is a form of sex-role stereotyping, that is, a set of assumptions about the sorts of activities and interests that are associated with the roles of men and women in society" (Miller et al, 2004, 26). Research by Cejka and Eagly (1999) showed that sex-stereotyping of an occupation corresponds with the occupational gender segregation and that sex-role stereotypes and occupational gender segregation has a bi-directional causal relationship. Their research further indicated that the engendering of an occupation is based on the perceived qualities that the job required and the stereotypical assumptions that these characteristics are possessed by one gender and not the other.

Occupational segregation is a strong influence on young people's career choice (Shu & Marini, 1998). At a very young age boys and girls believe certain jobs should be performed by men and others by women and these beliefs match the patterns of segregation (Miller & Hayward, 2006). These beliefs are more liberal for girls than for boys and become more so with age for both genders. Girls do

however, believe that women should be able to perform male stereotyped jobs. Regardless of this, individuals' career preferences remained restricted to occupations that match their genders in terms of sex-role stereotypes (Miller & Hayward, 2006). As England, Farkas, Kilbourne & Dou (1988, 546) so eloquently stated: "discrimination creates accommodation to limited options that may appear as preferences".

In their research Beggs and Doolittle (1993) suggest that occupational sex-typing was not based on male or female abilities or on the job requirements, but rather on the predominant sex in the occupation. There is also evidence that a "critical limit" of gender representation must be achieved for the occupation to be viewed as non-segregated (Neumayer, Kaiser, Anderson, Barney, Cuet, Jacobs, Lynch & Gazak, 2002).

2.3.2. Self-efficacy

The self-efficacy theory (Bandura,1982) refers to an individual's belief in their own abilities to successfully perform a given task and influences a pupil's career choice. In her study of self-efficacy Whiston (1993) showed that women have a lower self-efficacy for typically male activities. Hackett and Betz (1981) propose that women's self-efficacy might be inaccurate due to the stereotyping of certain activities. Breen and Garcia-Penalosa (2002) refers to this as Bayesian learning whereby history plays such a large role in shaping current preferences that true preferences are ignored. Beliefs about gender characteristics and career success are often transmitted from parent to child and thus influence the career choices of the next generation (Breen & Garcia-Penalosa, 2002).

Whiston (1993) suggests that career counsellors should apply self-efficacy theory in their counselling and be sensitive to women underrating themselves. Betz, Harmon and Borgen (1996) suggest that a lack of experience prevents the development of self-efficacy beliefs and interest and results in avoidance behaviour, which further prevents even initial exploration.

2.3.3. The Human Capital Theory

The Human Capital theory is based on the Neoclassical Economic view and proposes that the underlying reason for gender segregation is the disproportionate investment in education and training between the genders (Anker, 1997). It postulates that women invest less in their education and training than men do. Anker (1997) mentions that parents invest more in the education of sons than that of daughters (patriarchy) and that women accumulate less work experience because of less labour market opportunities.

Bradley (2000) showed that in Western societies women participate as much in tertiary education as men do, but that gender segregation is still prevalent in these societies. Ayalon (2003) postulates that it is not the female participation that is the problem, but rather women's choice of fields to study. Anderson, Forth, Metcalf and Kirby (2001) suggest that even with the same qualifications women's entry into, promotions and salaries remain lower than that of men for the same occupation. Men therefore have an advantage that cannot be explained by the Human Capital theory.

Polachek (1979), a pioneer of this theory, suggest that women use the human capital theory to choose occupations where their skills will depreciate less if they exit the job market for periods of time to fulfil family obligations. They then also choose careers with a higher starting wage and subsequent lower increases (wage trajectories). Research to date could however not prove this prediction (England, 1982) and showed that female occupations pay less at inception (England, Reid & Kilbourne, 1996). It's also been proposed that women value job flexibility more than men and thus choose such occupations and ultimately dominate them (Bender, Donohue & Heywood, 2005).

In general the Human Capital theory lacks empirical evidence and much of its predictions have been disproved (Okamoto & England, 1999). The theory assumes that individuals possess much information about their future plans, different career options and human capital depreciation rates and can perform the necessary calculations to support their career decisions, all of which is highly unrealistic (Okamoto & England, 1999).

2.3.4. Parental influence

Farmer, Wardrop, and Rotella (1999) identified parental support as a key factor influencing pupils' subject choices. The parents' attitude influences the child's view of the importance of the subject and ultimately of the occupational sector (Miller, Lietz & Kotte, 2002). Parental ambitions are also an important influence on the child's career choice (Erikson & Jonsson, 1996) and strongly correlated with high aspirations in their children and with good academic achievements (Schoon & Parsons, 2002).

Parental styles, and consequently their level of support or authoritativeness, are heavily influenced by culture and social context (Darling & Steinberg, 1993). Stewart and Bond (2002) caution against the impact of cultures within cultures, such as subpopulations, subgroups or social classes, as each subculture will have its own parental styles.

2.3.5. Teaching style and Career advice

Miller et al (2002) postulates that the teaching methods used by teachers strongly influence pupils' attitudes towards the subjects. This in turn influences the pupils' attitudes towards the career area in general. Munro and Elsom (2000) suggests that career advisors are reluctant to challenge career stereotypes when interacting with young people and prefer to encourage pupils' existing interests. Advisors view advice aimed at overcoming occupational segregation as being outside their duties, and only supply information for career choices that the pupils ask about (Munro & Elsom, 2000). This can only serve to reinforce existing stereotypes. Kelly and Lee's (2002) research showed that a lack of information was the major problem contributing to the difficulties of career decision-making.

When choosing fields of study women disadvantage themselves by avoiding science and mathematics (Ayalon, 2003), both of which are highly valued in the modern society. Instead women gravitate towards lesser paid humanitarian and social sciences. The avoidance of science and mathematics at tertiary level is rooted in earlier education and is influenced by a myriad of factors such as lack of interest, negative attitude, mathematics anxiety, negative input from teachers and counsellors, masculine orientation of the curriculum and very few female role models in the fields (Ma & Willms, 1999).

2.3.6. Self-Image

The image perception of certain sectors, e.g. I.T. sector as “geekie” dominated by “techie” guys, contributes to women’s entry into certain occupations (Edwards & Stephensons, 2002). McLean and Kalin (1994) showed that Super’s theory (1957) still holds true. Super’s theory states that individuals attempt to match their self-image as closely as possible to an occupational image. This theory was not previously used to explain gendered self-selection, but the key concepts of self-image and occupational image are gendered and it can thus be adapted to fit (McLean & Kalin, 1994). Gender plays a significant role in social cognition about self, including personality, and facilitates congruence between self-image and occupational image (McLean & Kalin, 1994). The suggestion correspond closely with stereotyping (see 2.3.2), but sadly not much research has been done on the topic of self-image and its effects on gendered self-selection.

2.3.7. Exchange Utility

Humphries and Rubery’s (1995) research shows that individuals make training choices based on exchange utility, i.e. based on their assessment of likely employment opportunities. Women would be less likely to choose a career path in which they may face discrimination from employers based on their gender. Foskett and Hesketh (1996) revealed that career prospects were a key factor in choosing to enter an occupational field. Unfortunately very little literature is available on this topic.

2.3.8. Extrinsic and Intrinsic Rewards

The work of Tracey and Hopkins (2001) showed that although reward is an important factor in career choice, women view intrinsic rewards (such as interest and good relationships) as more important than men do. Women are less inclined to state extrinsic rewards (such as salary and status) as their reasons for job selection. No further research on this topic relating to gender segregation could be found.

All of the above theories are valuable in contributing to a holistic understanding of occupational gender segregation. They also highlight the myriad of issues that need to be overcome before gender segregation will dissipate.

2.4. Worldwide Perspective

Occupational gender segregation persists regardless of equal opportunity and antidiscrimination legislation in many countries, increased female labour market participation and increased female educational attainment (Anker, 1998). Cross-national segregation comparisons are very difficult to make unless the same methodology is used in calculating the Index of Dissimilarity. Levels of aggregation have a profound impact on the Index and readers are thus warned not to compare tables from different authors (see 2.1).

In an extensive investigation of worldwide gender segregation Anker (1998) finds that occupational gender segregation is the lowest in the Asia-Pacific regions and the highest in the Middle East and North African countries (see Table 2.1). Europe scores in the middle with the Scandinavian countries having the highest segregation in Europe.

Country	**Index of Dissimilarity**
Sweden	0.630
Finland	0.616
Austria	0.607
Australia	0.581
Switzerland	0.581
Norway	0.573
Netherlands	0.567
United Kingdom	0.567
Hungary	0.558
France	0.556
Canada	0.531
Germany	0.523
Japan	0.502
Unites States	0.463
Italy	0.449
OECD Average	0.563

Table 2.1: Occupational Gender Segregation for around 1990

Source: Anker, 1998

Explanations for cross-national variations in gender segregation fall into two broad categories, i.e. economic structure and human capital differences. The economic structure explanation consists of three factors, i.e. the level of economic development, economic dependency and the size of the service sector (Chang, 2004). Increased economic development causes a shift in the social hierarchy of a country. This is due to the usual change in women's rights, easier access to education and lower birth-rates, all of which should add to women's ability to participate in the labour market (Chang, 2004). Anker (1998) and Chang (2004) found no statistical relationship between the above-mentioned variables.

Economic dependency theory refers to developed countries shifting manufacturing facilities to developing countries to utilise the cheaper labour. It is argued that dependency exploits women in tedious, low paying jobs and should thus increase occupational gender segregation (Chang, 2004). Semyonov and Jones (1999) found no statistical relationship and were supported by Chang's (2004) research (see Table 2.2 for dissimilarity indices). The service sector is usually dominated by women and the size of a countries service sector should thus increase gender segregation as shown by empirical research conducted by Nermo (2000). Chang (2004), in her study of 43 job categories in 16 developing countries, found no statistical relationship.

Women in developing countries often have lower education levels than their male counterparts (United Nations, 1995). Chang (2004) found that human capital was strongly influenced by women's labour participation. The more women participated in the labour market the more diverse the education levels became, which in turn caused higher levels of segregation into low-skilled jobs. Chang (2004) postulates that governmental policies, specifically paid maternity leave and antidiscrimination legislation, are a much stronger predictor of occupational gender segregation differences across countries. Paid maternity leave increases female participation across all occupations while antidiscrimination legislation helps to legitimise women's entry into male dominated positions.

Country	Index of Dissimilarity
Kuwait	0.716
Ghana	0.700
Haiti	0.663
Bahrain	0.658
Angola	0.644
Egypt	0.580
Mauritius	0.557
Costa Rica	0.556
Cyprus	0.520
Bahamas	0.502
Korea	0.484
Singapore	0.475
India	0.434
Hong Kong	0.421
Taiwan	0.397
China	0.388

Table 2.2: Occupational Gender Segregation in Developing Countries

Source: Chang, 2004

2.5. The South African Context

South Africa is a developing country with a multitude of cultures, 11 official languages and the most advanced economy on the African continent. The country boasts excellent infrastructure, an advanced legal system and a high economic growth rate. It is however, plagued by a myriad of problems. Poverty and low education and literacy levels are a major concern and blamed for the high HIV/AIDS infection rate of 21.5% (AIDS Foundation South Africa, 2003). Another major problem facing the country are the high levels of violent crimes, which in addition create negative perceptions for international investors and limits foreign direct investment in the country. This does not help the matter of unemployment, which remains at a staggering rate of 26.7% (Statistics South Africa, 2005).

During the last Census (2001) conducted by Statistics South Africa, the South African population consisted of 44.8 million people of whom 48% were male and 52% female. The population distribution is shown in Figure 2.1 with the Black African population being 79% of the total population.

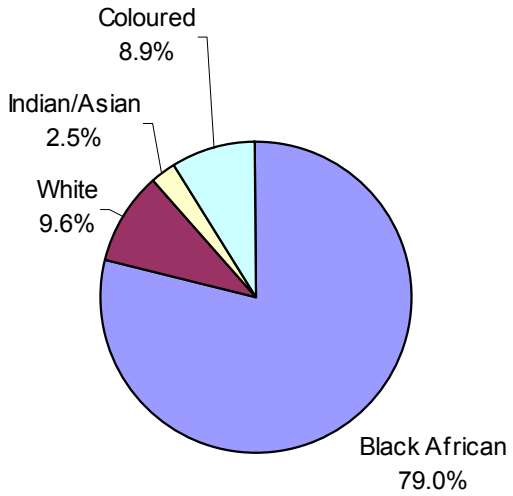

Figure 2.1: Distribution by Population Group

Source: Statistics South Africa, 2001

A major cause of concern is South Africa's low education levels, with 17.9% of the population having no schooling at all. Figure 2.2 shows the distribution across educational levels for ages 20 and above. Figure 2.3 shows the almost equal distribution of the genders across the educational levels with females having a slight disadvantage in the no schooling category. The relatively equal distribution of males and females across the educational levels makes the Human Capital Theory, referring to unequal investment in education as an explanation of gender segregation, less applicable to the South African context. These Figures have been viewed in aggregate, but when investigated in terms of racial distributions will probably look much different. Racial analysis however, falls outside the scope of this study.

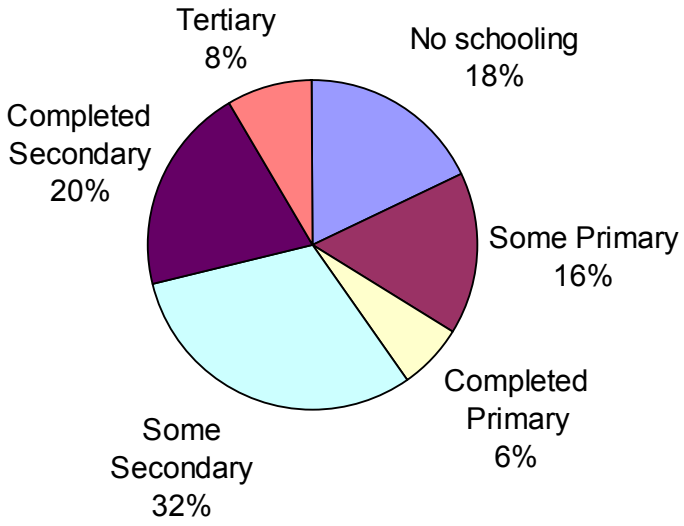

Figure 2.2: Education Levels of the Population Aged 20+ years

Source: Statistics South Africa, 2001

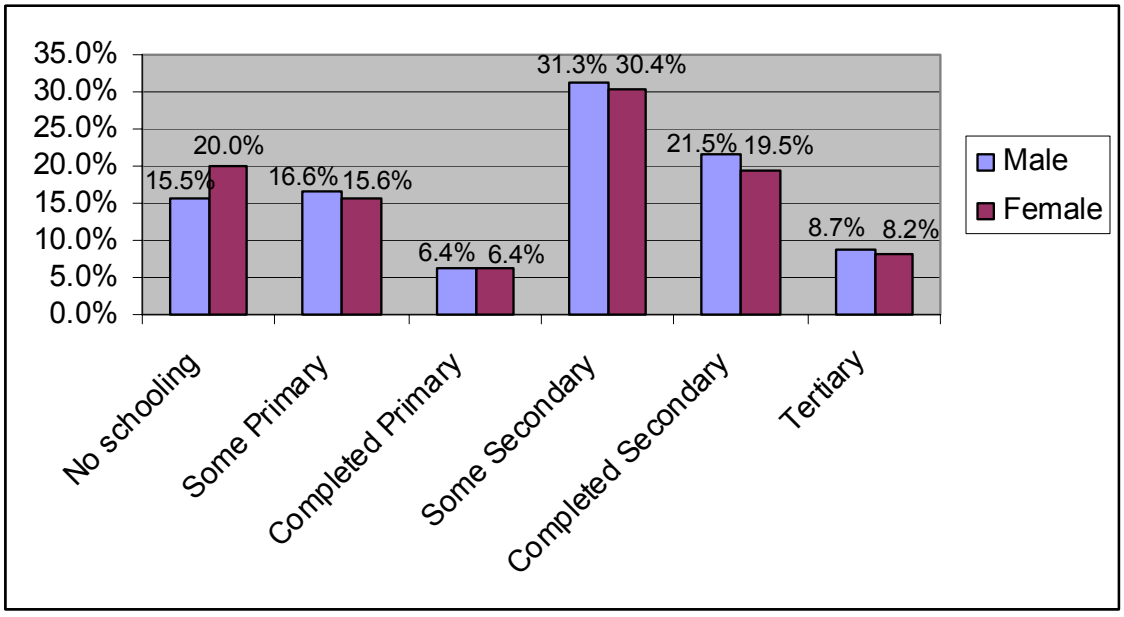

Figure 2.3: Gender Distribution across Educational Level

Source: Statistics South Africa, 2001

Also interesting to note about the South African population is that the predominant religion is Christian or Christian variants (Statistics South Africa, 2001). The mainline Christian groups, i.e. Anglican, Methodist, Presbyterian, Lutheran, Roman Catholic and Orthodox account for 32.6% of the population while independent churches such as the African Independent Churches (AIC), Zionist churches etc. constitute another 31.8% of the population (see Figure 2.4). This eliminates the extreme effects that religions such as Islam can have on gender segregation.

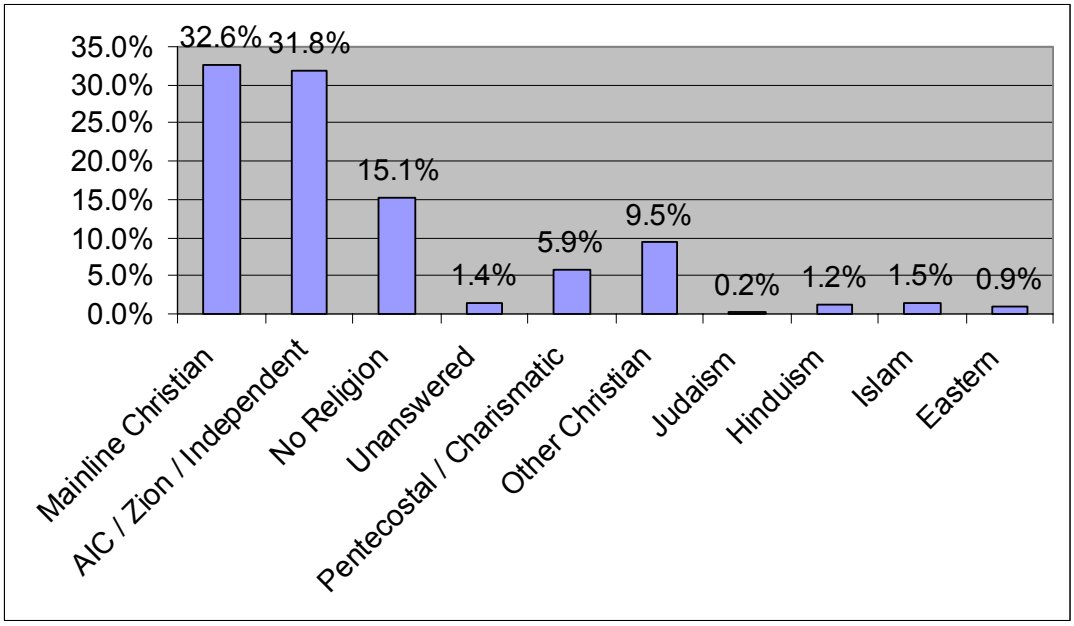

Figure 2.4: Gender Distribution across Educational Level

Source: Statistics South Africa, 2001

The most recent Labour Force Survey (LFS) (September 2005) (Statistics South Africa, 2005) indicates the employment and unemployment figures per gender. Figure 2.5 indicates that women, at a 31.7% unemployment rate, are more prone to unemployment that men (Kilbourne et al, 1994; Lee & Woolard, 2003), 22.6% unemployment rate. Note that these figures represent the economically active workforce only.

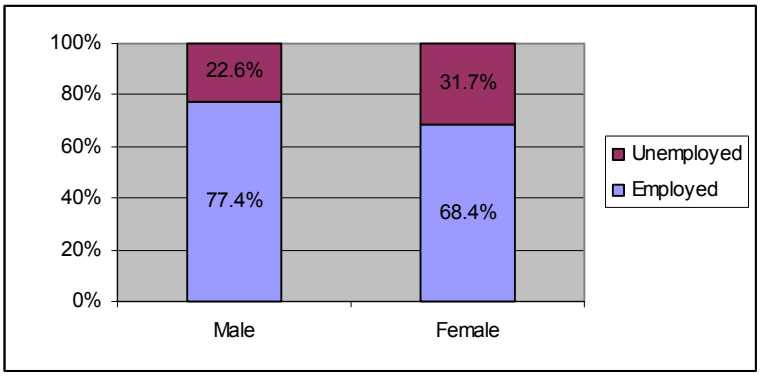

Figure 2.5: Employment Rates by Gender

Source: Statistics South Africa, 2001

When investigating the gender distribution across industry types the gender segregation is obvious with women being grossly under represented in 7 of the 10 industries, see Figure 2.6 below. The most notable industries are mining and construction with less than 10% of employees being women. The most integrated industry is wholesale and retail trade while community, social and personal services is close to integration. As one would guess the private household industry is dominated by women and are mainly black women (72% of total employees) and a few coloured women (7.7% of total employees).

Figure 2.7 shows the gender distribution across broad occupational fields. What should be noted here are the predominance of females as clerks and the lack of women as plant and machine operators and assemblers and as craft and related trades workers. These are highly aggregated categories and, as stated previously, the segregation level, measured by the Index of Dissimilarity, becomes higher the less aggregated the categories are (Preston, 1999).

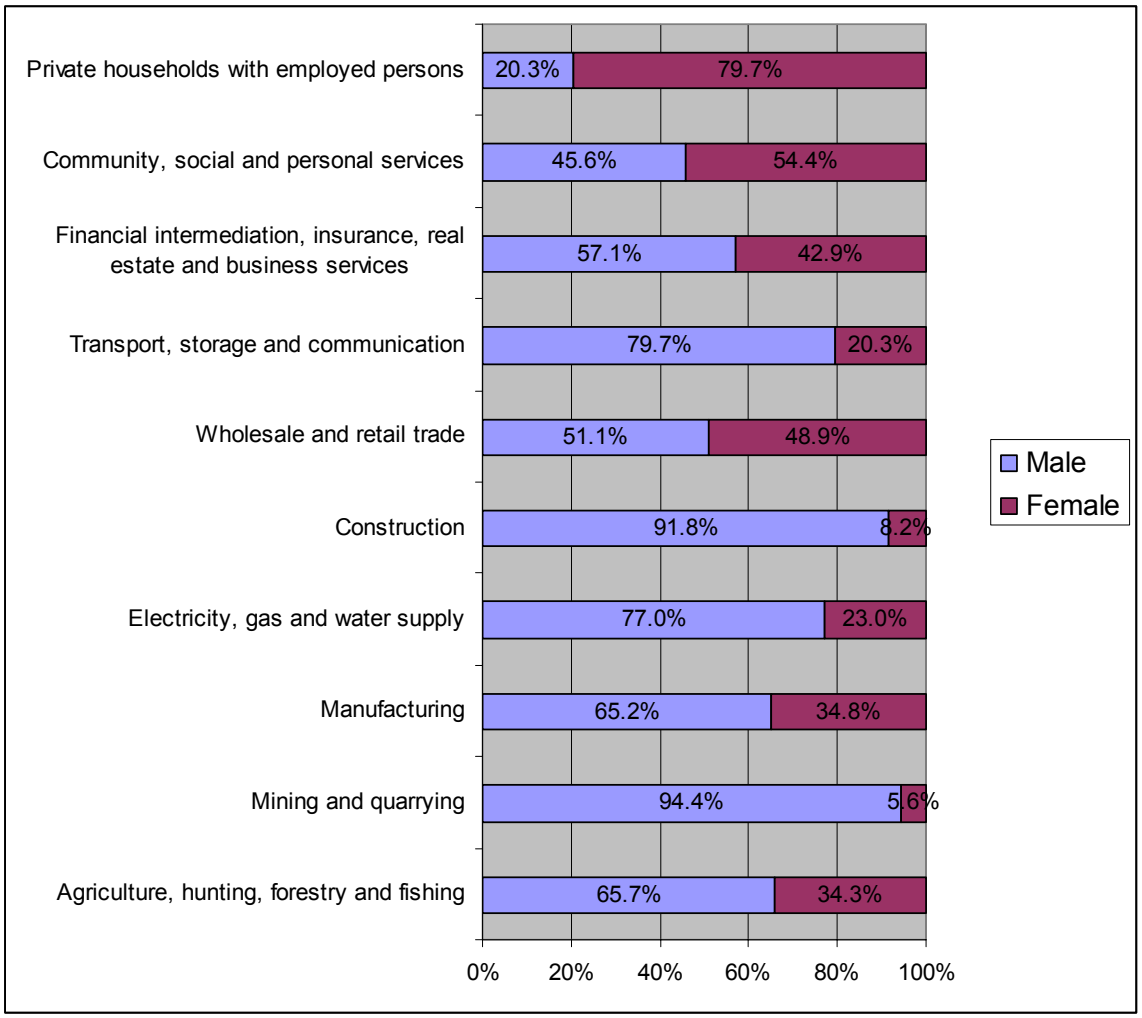

Figure 2.6: Gender Composition of Industry Types

Source: Statistics South Africa, 2005

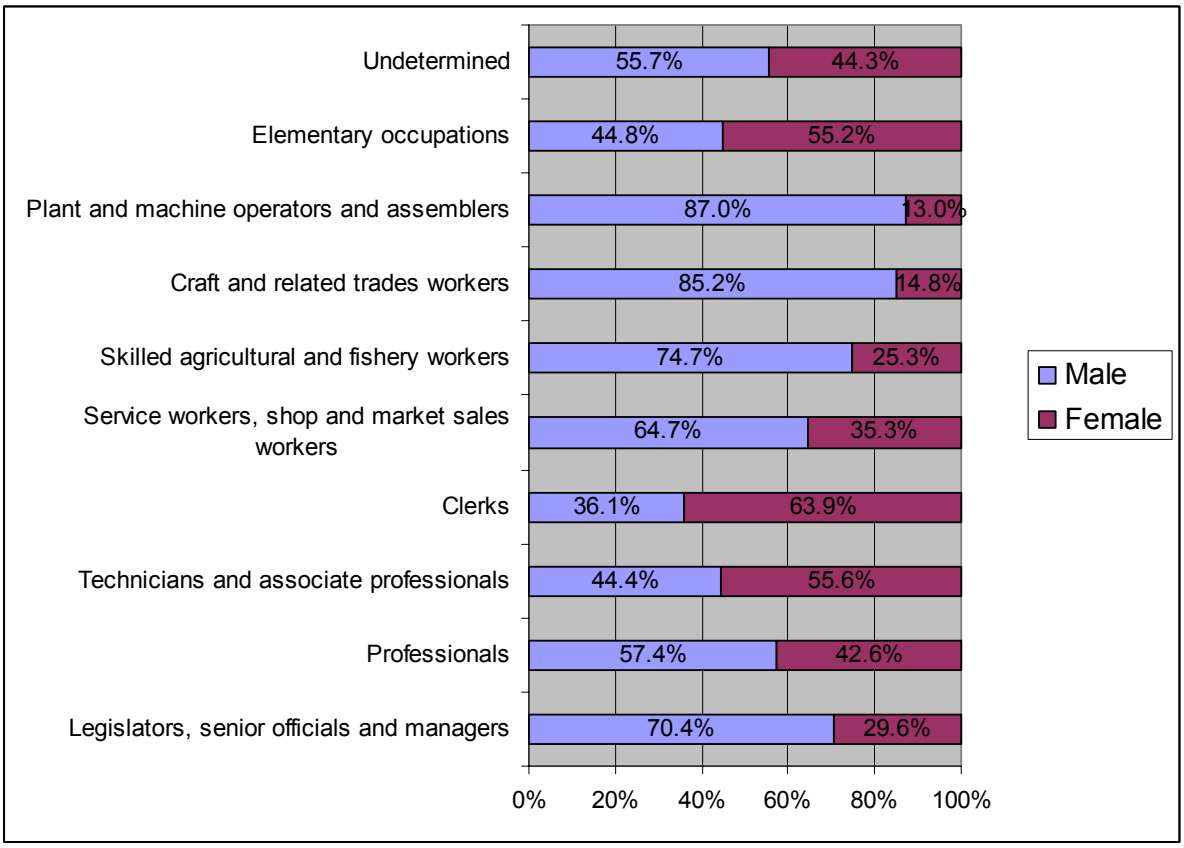

Figure 2.7: Gender Distribution by Occupations

Source: Statistics South Africa, 2005

The following statement of the National Executive Committee of the African National Congress very clearly sums up the situation of women in South Africa:

> "Gender oppression is everywhere rooted in a material base and is expressed in socio-cultural traditions and attitudes all of which are supported and perpetuated by an ideology which subordinates women. In South Africa it is institutionalised in the laws as well as the customs and practices of all our people. Within our racially and ethnically divided society, all women have a lower status than men of the same group in both law and practice. And as with racism, the disadvantage imposed on them ranges across the political, economic, social, domestic, cultural and civil spheres." (African National Congress, 1990, no page).

Women are marginalised and according to Rasool, Vermaak, Pharoah, Louw and Stavrou's 2003 National Survey 80% of women experienced emotional abuse, 76% experienced physical abuse and 63% sexual abuse. 32% had experienced all four types of abuse and the most common location for all four types of abuse was in the home. These forms of abuse have a major impact on the victims in that it causes isolation from others, low self-esteem, anxiety, feelings of shame and guilt emotional problems, intimacy problems, illness and an increase in alcohol or drug use (National Clearinghouse on Family Violence, 1996). It can consequently impact negatively on self-image and self-efficacy (see 2.3.2 and 2.3.6).

As in most civilisations across the globe, women in South Africa are the main caregivers who look after the children, sick and elderly and bare the sole domestic responsibilities. This is seen as a women's duty and usually performed without remuneration (Lalthapersad, 2002). It also hinders women from entering the labour market, as they cannot juggle family duties and work. With the AIDS epidemic's high infection rates women, as the main caregivers, have their hands full caring for the sick and dying and for the 1.2 million AIDS Orphans (UNAIDS, 2004; Lalthapersad, 2002).

The South African government has played a significant role in elevating women's social standing. The Constitution of the Republic of South Africa, adopted in 1996, prohibits discrimination based on gender. This section of the Constitution was further elaborated on in the Promotion of Equality and Prevention of Unfair Discrimination Act 4 of 2000. In passing the Domestic Violence Act No. 116 of 1998, Parliament formally recognises the existence of the issue of abuse against women and set laws in place to protect women and children. Under the Criminal Law Amendment Act No 105 of 1997, the punishment for rape has been increased to a minimum of 10 years imprisonment. Many other Acts have been updated and changed to reflect the changed social standing of women.

On an international front the South African Government ratified the United Nation's Convention on the Elimination of All Forms of Discrimination Against Women in 1995 and is bound by the 1993 unanimous resolution of the Declaration on the Elimination of Violence Against Women.

On the labour market side the Employment Equity Act, No. 55 of 1998 is aimed at promoting equal treatment of women in the labour market, among other disadvantaged groups. The Basic Conditions of Employment Amendment Act No. 11 of 2002 affords women four months maternity leave as a basic condition of employment and protects women during the pregnancy period from unhealthy labour practices. Government also tries to lead by example with 32.8% of Parliament (International Marketing Council of South Africa, 2004) and 43% of the South African Cabinet (Mokgola, 2004) being women and the African National Congress actually using quotas to ensure female representation (International Marketing Council of South Africa, 2004).

The Department of Science and Technology has been very proactive in their strategy to attract women into the science, engineering and technology (SET) sector. They have established the South African Reference Group (SARG) on women in SET to investigate women's participation in SET. Not only do they monitor and report on the current participation levels, but they also make recommendations as to how to better the situation (Centre for Research on Science and Technology (CREST), 2004). In 2001 more than half (53%) of enrolled SET students were female, however only 34% of postgraduate students were female (CREST, 2004).

CREST's (2004) research concluded that women in SET are younger and less qualified than the men and receive a significantly smaller portion of the rewards and recognition and are usually clustered in certain scientific domains. Women are over-represented in Health and Social Sciences, but grossly under-represented in Natural Sciences and Engineering (CREST, 2004). CREST (2004) further investigated initiatives promoting women's participation in SET and found that a number of institutions have gender equity policies in place, but very few focussed explicitly on women in SET. Initiatives that were found included the

Thuthuka “Women in Research” programme of the National Research Foundation, the “Women in Water Awards” awarded by the Water Research Commission and the Department of Water Affairs and Forestry and a range of tertiary programmes such as the Leadership Training Programme (UPE), Women’s Executive Development Programme (AUSAID), Gender Mentoring Programme (TELP) etc. (CREST, 2004).

Another programme aimed at decreasing gender segregation is Women in IT, which is a bursary and mentorship programme that aims to create insight, opportunity, growth and development for women within the information technology sector. It creates formal and informal networks between women IT students, tertiary institutions, South African IT professionals and corporates. The programme is headed by Microsoft and sponsored by a number of corporates, such as Bytes Technology Group, SAP and Vodacom (Women in IT, 2006).

It can thus be concluded that South Africa faces some unique obstacles all of which influence gender participation in the labour market and consequently also gender segregation. Fortunately the South African Government is taking steps to better women’s circumstances and to promote female employment.

3. CHAPTER 3: RESEARCH METHODOLOGY

3.1. Sampling Methodology

Due to the time and budgetary constraints of the study a convenience sample methodology was chosen as the most practical method. A convenience sample is one that is chosen for its convenience and is not a random sample. The UNISA first year MBL students were requested to complete the survey during their August Centre Visit at the SBL Sasol auditorium in Midrand.

Two groups of Gauteng students were selected for the study to coincide with the use of the Gauteng labour statistics in calculating the segregation indices and to ensure that the sample size was large enough to supply useful data. The resulting sample size was 106 students, as can be seen from Table 3.1 below.

FUNCTIONAL FIELD	MALES	FEMALES	TOTAL
FINANCE	15	8	23
GENERAL MANAGEMENT	8	4	12
INFORMATION TECHNOLOGY / SYSTEMS	6	3	9
HUMAN RESOURCES	3	7	10
MARKETING / SALES / CUSTOMER SERVICE	7	10	17
OPERATIONS / PRODUCTION	9	6	15
PROCUREMENT / BUYING / LOGISTICS	3	2	5
RESEARCH & DEVELOPMENT	5	1	6
OTHER, E.G. LAWYER, DOCTOR, PASTOR	2	7	9
TOTAL SAMPLE	**58**	**48**	**106**

Table 3.1: Gender composition of functional fields

3.2. Data Collection

Data was collected by using a survey. The survey consisted of two sections. Section A determined the gender of the sample element and subsequently their functional field of occupation (See Appendix A). This section also asked for their job title for verification purposes, i.e. to ensure that they have chosen the appropriate functional field. To ensure that the study remained focussed on the research question, the questionnaire was completely anonymous and no further demographics were collected.

Section B contained the attitudinal Likert scale questions to measure the extent that the various supply-side explanations explain the women's career decisions. The group was instructed that only the female portion of the sample group were to complete Section B. The survey contained various statements expressing

possible reasons underlying the women's' specific career selection. These supply-side explanations that were tested, were derived directly from the body of literature reviewed in Chapter 2. It was not the purpose of this study to find or test new explanations (see section 1.4).

Table 3.2 shows which survey questions relate to which explanation type and how the tabulated questions were grouped for analysis.

Explanation being tested	**Question numbers**
Occupational sex-typing	1 – 4
Self-efficacy	5 – 6
Human Capital Theory	7 – 9
Parental Influence	10 – 12
Teaching style	13 – 16
Career advice	17 – 19
Self-image	20 – 21
Exchange utility	22 – 24
Reward	25 - 26

Table 3.2: Categorisation of survey questions by explanation type

The purpose of the study and appropriate survey instructions were relayed to the students prior to the completion of the survey. The first year students consisted of a combined group from different geographical regions. As the proportion of male to female participation in the labour market for Gauteng will be used in the statistical analysis of the data, only the students from Gauteng province were requested to complete the survey.

The surveys were distributed and left with the students for completion during a lecture and a break. This proved to be more than enough time for completion and the response rate was very high at approximately 95%. This response rate was calculated by comparing the quantity completed surveys received (106) to the actual number of surveys distributed (112).

3.3. Measurement of Occupation Gender Segregation

The first purpose of the study was not to measure trends over time, nor to compare cross-national data, but simply to prove that the phenomenon exists. For this reason the Karmel and MacLachlan (1988) index (I) were used to measure the segregation. As mentioned in 2.1.3 this index measures the segregation while taking the occupational structure and the gender share of the labour market into account. This is regarded as an important attribute for this specific study and none of the other measurement techniques allow for this. The Karmel and MacLachlan index ranges from 0 to 1 with higher numbers indicating higher levels of segregation and 0 indicating no segregation.

The Karmel and MacLachlan index (I) was calculated per functional field using the formula: $I_p = (1/T)[F_j – a(M_j + F_j)]$, where

T = the total sample elements in the functional field;

a = the female share of total employment, i.e. 42% (Statistics South Africa, 2005);

F_j = the number of females in functional field j; and

M_j = the number of males in functional field j.

3.4. Hypotheses

The following hypotheses were tested:

H_1 = Research and Development is a highly segregated functional field and male dominated, i.e. I > 0.20.

H_0 = Research and Development is not a highly segregated functional field and male dominated, i.e. I < 0.20.

H_2 = Human Resources is a highly segregated functional field and female dominated, i.e. I > 0.20.

H_0 = Human Resources is not a highly segregated functional field and female dominated, i.e. I < 0.20.

H_3 = Finance is close to being a non-segregated functional field, i.e. I < 0.10.

H_0 = Finance is not close to being a non-segregated functional field, i.e. I > 0.10.

H_4= Each explanation type is an important factor when selecting a functional field (to be tested for all nine explanation types).

H_0 = Each explanation type is not an important factor when selecting a functional field (to be tested for all nine explanation types).

3.5. Limitations of the Methodology

Due to the sample being non-random it might have inherent qualities that could skew the results of the study. The quantity of students enrolling for MBL is not necessarily in proportion to the quantity of workers in the functional fields that this study is measuring. The gender distribution of the students might also not reflect the gender distribution of the labour market or of the workers in the functional fields.

The sample was very small compared to the size of the labour market. The Gauteng labour market comprises of approximately 12,301,000 workers (Statistics South Africa, 2005). A sample size of 106 is minuscule in comparison and might have a major impact on the representativeness of the sample.

The sample methodology limits any investigation into vertical segregation as the majority of MBL students will probably already occupy managerial positions and the lower level employees are thus not represented by the sample. The narrow scope of the study required a simple and focussed questionnaire. Demographic information about the sample elements, which might be used to investigate influences of ethnicity, culture and religion, was omitted. This limits any investigation into the impact of these issues.

The use of the Karmel and MacLachlan index (I) also poses limitations in that the index is not suited for cross-national or cross-sectional studies. This is due to the index's sensitivity to the gender structure of the labour force of each section or nation being measured. Consequently the results obtained from the research can not be used for this purpose.

4. CHAPTER 4: RESEARCH RESULTS

4.1. Results of Survey Section A

Firstly the ratio of male to female delegates was calculated. Figure 4.1 shows the ratios per functional field and also the "integration line", i.e. zero gender segregation. This line is drawn at 58% male to 42% female, which is also the gender share of the total employment in Gauteng (Statistics South Africa, 2005).

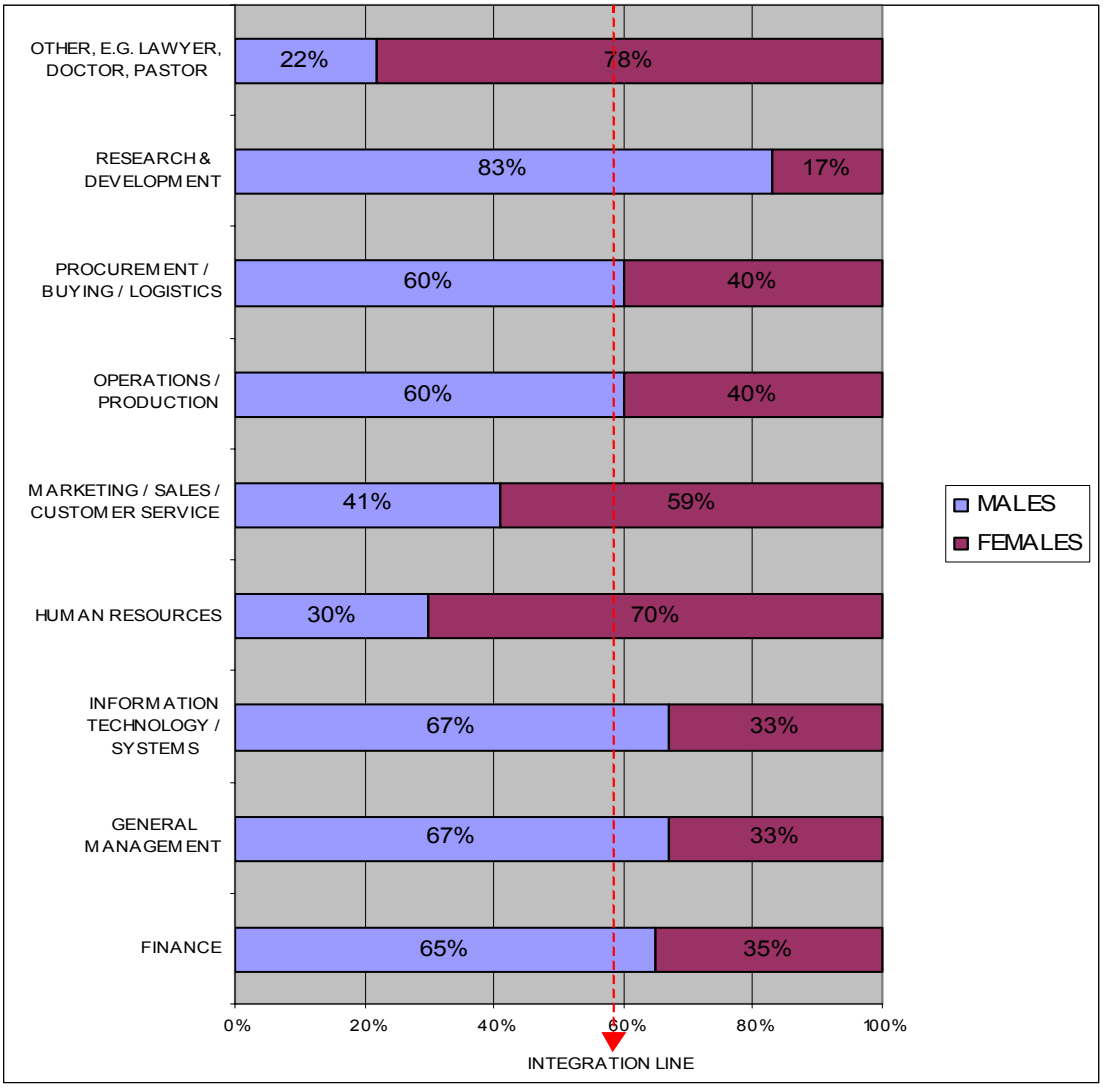

Figure 4.1: Segregation of functional fields

Secondly the Karmel and MacLachlan index was calculated per functional field, ranging from 0 to 1 with higher numbers indicating higher levels of segregation and 0 indicating no segregation. The results of these calculations are shown in Table 4.1.

FUNCTIONAL FIELD	INDEX
FINANCE	0.07
GENERAL MANAGEMENT	0.09
INFORMATION TECHNOLOGY / SYSTEMS	0.09
HUMAN RESOURCES	0.28
MARKETING / SALES / CUSTOMER SERVICE	0.17
OPERATIONS / PRODUCTION	0.02
PROCUREMENT / BUYING / LOGISTICS	0.02
RESEARCH & DEVELOPMENT	0.25
OTHER, E.G. LAWYER, DOCTOR, PASTOR	0.36
TOTAL SAMPLE	**0.03**

Table 4.1: Karmel and MacLachlan Index per Functional Field

An index of 0.20 and higher was chosen to indicate high levels of segregation. As can be seen from Figure 4.1 and Table 4.1 Human Resources is strongly gender segregated and female dominated (I = 0.28), while Research and Development is also strongly segregated, but male dominated (I = 0.25). Marketing / Sales / Customer Service is weakly segregated with more women in the field than men (I = 0.17). The “Other” category was surprisingly female dominated and showed the highest index figure, i.e. I = 0.36. The indices of the remaining functional fields were very low and close to full integration.

4.2. Results of Survey Section B

The data from Section B was tabulated in Microsoft Excel and grouped according to the explanation types (see Table 3.2). The results for each explanation type will firstly be discussed in terms of the separate questions and secondly on an average basis.

The following survey questions relate to the Occupational Sex-Typing explanation type:

Q1: I chose my current functional field because it is appropriate for a woman.

Q2: I chose my current functional field because there are many women in the field.

Q3: My current functional field requires certain female attributes that men do not possess.

Q4: I did not choose a predominantly male functional field because I do not possess the male attributes that the field requires.

From the answers to the questions relating to Occupational Sex-Typing it was clear that the majority of the sample did not agree with any of the four questions relating to the explanation type (see Table 4.2).

		OCCUPATIONAL SEX-TYPING			
	QUESTION NUMBER:	1	2	3	4
FREQUENCY	Strongly Disagree	18	18	17	23
	Disagree	20	24	18	19
	Neither	6	6	8	5
	Agree	2	0	5	1
	Strongly Agree	2	0	0	0

Table 4.2: Results for Occupational Sex-Typing

The following survey questions relate to the Self-Efficacy explanation type:

Q5: I did not consider a predominantly male functional field because I do not believe I will be good at it.

Q6: I did not consider a predominantly male functional field because I am simply not interested in male type activities.

The answers to the Self-Efficacy questions showed much the same disagreement by the majority of the sample elements (see Table 4.3)

		SELF-EFFICACY	
	QUESTION NUMBER:	5	6
FREQUENCY	Strongly Disagree	25	19
	Disagree	17	16
	Neither	6	9
	Agree	0	4
	Strongly Agree	0	0

Table 4.3: Results for Self-Efficacy

The following survey questions relate to the Human Capital Theory explanation type:

Q7: I chose my current functional field because my education and skills would depreciate less while I take care of family obligations.

Q8: I chose my current functional field because it promised flexibility to take care of my family responsibilities.

Q9: I chose my current functional field because it had a higher starting salary to compensate for my absence due to my family responsibilities.

The Human Capital Theory questions showed a little more agreement by a minority of the sample elements (see Table 4.4).

		HUMAN CAPITAL THEORY		
	QUESTION NUMBER:	7	8	9
FREQUENCY	Strongly Disagree	16	14	17
	Disagree	18	14	17
	Neither	8	10	11
	Agree	4	10	3
	Strongly Agree	2	0	0

Table 4.4: Results for Human Capital Theory

The following survey questions relate to the Parental Influence explanation type:

Q10: I chose my functional field because my parents worked in this functional field and served as good representatives.

Q11: My parents advised me on choosing my functional field.

Q12: My parents chose my functional field on my behalf. I had no choice.

The Parental Influence questions were again mostly disagreed to (see Table 4.5).

		PARENTAL INFLUENCE		
	QUESTION NUMBER:	10	11	12
FREQUENCY	Strongly Disagree	29	29	34
	Disagree	16	15	10
	Neither	1	1	2
	Agree	2	2	2
	Strongly Agree	0	1	0

Table 4.5: Results for Parental Influence

The following survey questions relate to the Teaching Style explanation type:

Q13: I enjoyed the high school subjects that related to my current functional field.

Q14: The teachers that presented the subjects that related to my current functional field were inspiring.

Q15: The teachers that presented the subjects that related to my current functional field were female.

Q16: My teachers, through their teaching styles, had a profound impact on my chosen field of study.

The Teaching Style questions in turn showed a more agreeable response from a minority share of the sample elements (see Table 4.6). Note however, that question 15's agreement responses were very low.

		TEACHING STYLE			
	QUESTION NUMBER:	13	14	15	16
FREQUENCY	Strongly Disagree	11	10	20	10
	Disagree	10	15	13	18
	Neither	12	7	10	7
	Agree	8	9	2	10
	Strongly Agree	7	7	3	3

Table 4.6: Results for Teaching Style

The following survey questions relate to the Career Advice explanation type:

Q17: I did not choose another functional field because I did not have adequate career information about them.

Q18: My career advisor encouraged me to pursue my field of interest.

Q19: My career advisor did not supply alternative options and information.

The Career Advice questions also showed some agreement from a small portion of the sample (Table 4.7). Note specifically the number of agreement responses for question 17.

		CAREER ADVICE		
	QUESTION NUMBER:	17	18	19
FREQUENCY	Strongly Disagree	14	13	12
	Disagree	6	19	14
	Neither	6	6	12
	Agree	16	7	7
	Strongly Agree	6	3	3

Table 4.7: Results for Career Advice

The following survey questions relate to the Self-Image explanation type:

Q20: I chose my current functional field because it fit well with my self-image.

Q21: I rejected certain functional fields because of their associated "image", e.g. IT = geeks, Finance = boring, Engineering = manly.

The Self-Image questions had a somewhat conflicting response (Table 4.8). Almost half the sample elements to some extent agreed with question 20, but the majority disagreed with question 21.

		SELF-IMAGE	
	QUESTION NUMBER:	20	21
FREQUENCY	Strongly Disagree	7	15
	Disagree	10	18
	Neither	9	11
	Agree	19	4
	Strongly Agree	3	0

Table 4.8: Results for Self-Image

The following survey questions relate to the Exchange Utility explanation type:

Q22: I chose my current functional field because it promised an adequate return on the required investment in education.

Q23: I chose my current functional field because it provided good growth and promotional opportunities.

Q24: I rejected certain functional fields because of potential discrimination I would face there.

The majority of the sample agreed to question 22 and 23 of Exchange Utility, while they disagreed with question 24 (Table 4.9). The disagreement to Question 24 could either be due to the fact that these women were willing to face and conquer discriminatory factors or that they did not perceive possible discrimination against them or that it was not a factor they considered in their career-decisions.

		EXCHANGE UTILITY		
	QUESTION NUMBER:	22	23	24
FREQUENCY	Strongly Disagree	4	2	15
	Disagree	5	5	23
	Neither	7	2	10
	Agree	23	25	0
	Strongly Agree	9	14	0

Table 4.9: Results for Exchange Utility

The following survey questions relate to the Reward explanation type:

Q25: I chose my current functional field because it provided good intrinsic rewards such as interesting work, flexibility and relationships.

Q26: I chose my current functional field because it provided good extrinsic rewards such as money and status.

The last explanation type was Reward and the majority of respondents agreed that it was a deciding factor (Table 4.10). What was interesting from the responses was that question 25, relating to intrinsic rewards received more agreement (81%) than question 26 (60%), relating to extrinsic rewards (Figure 4.2).

		REWARD	
	QUESTION NUMBER:	25	26
FREQUENCY	Strongly Disagree	3	4
	Disagree	3	7
	Neither	3	8
	Agree	24	23
	Strongly Agree	15	6

Table 4.10: Results for Reward

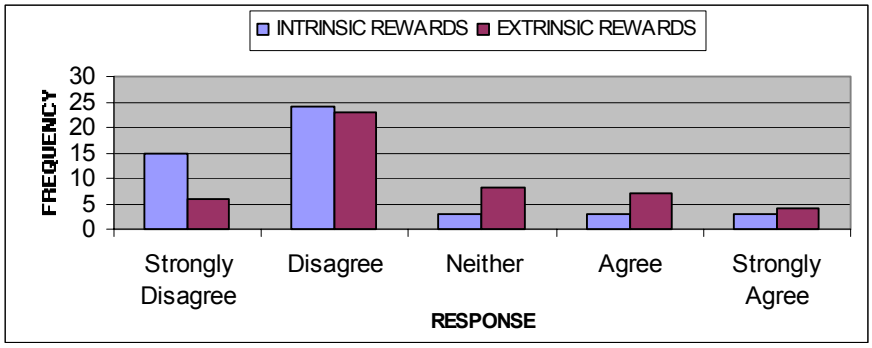

Figure 4.2: Intrinsic Rewards and Extrinsic Rewards

The average response per sample element for the questions pertaining to the explanation type was calculated. Appendix B (Results per Explanation Type) shows the results of this process rounded to two decimal places. The results were charted to visually depict the distribution. These are shown in Figure 4.3 to 4.11.

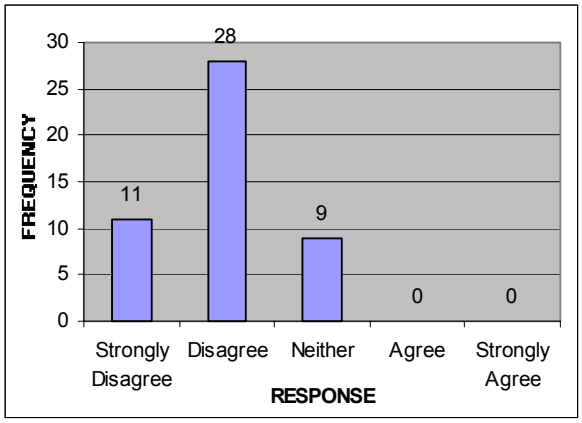

Figure 4.3: Occupational Sex-Typing

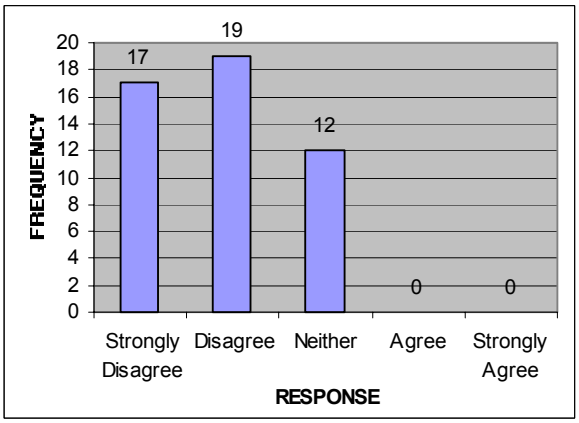

Figure 4.4: Self-Efficacy

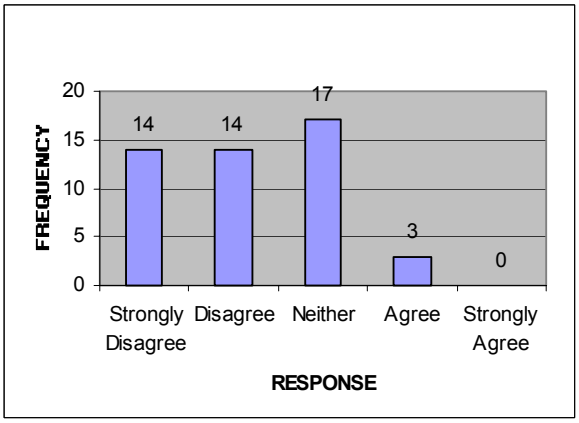

Figure 4.5: Human Capital Theory

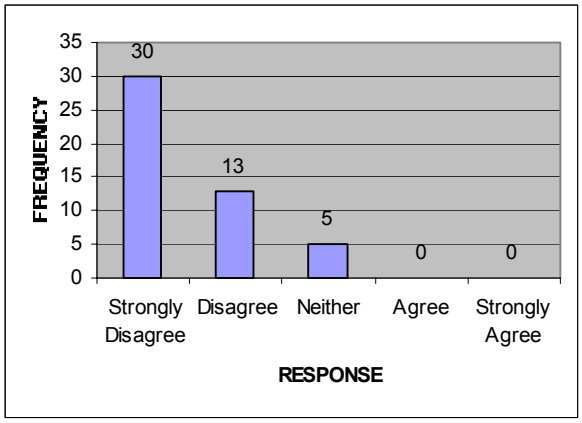

Figure 4.6: Parental Influence

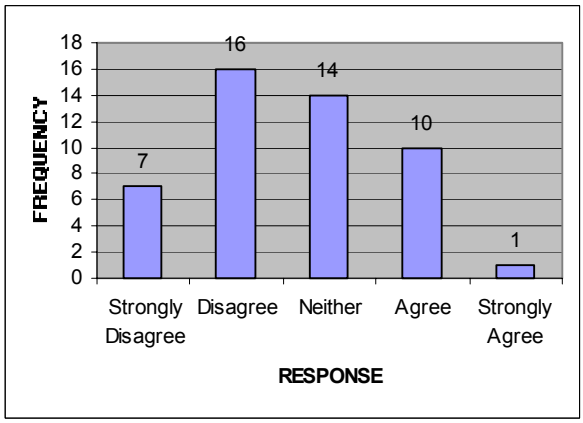

Figure 4.7: Teaching Style

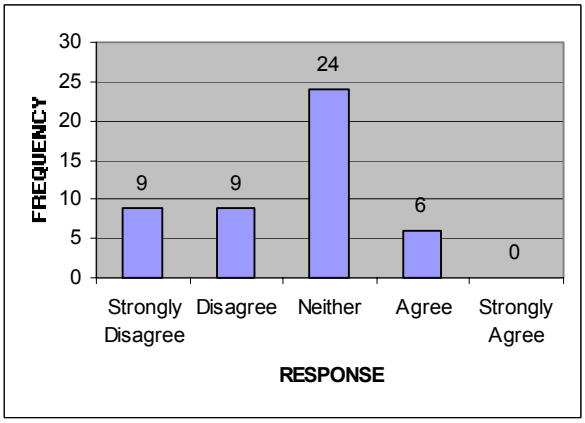

Figure 4.8: Career Advice

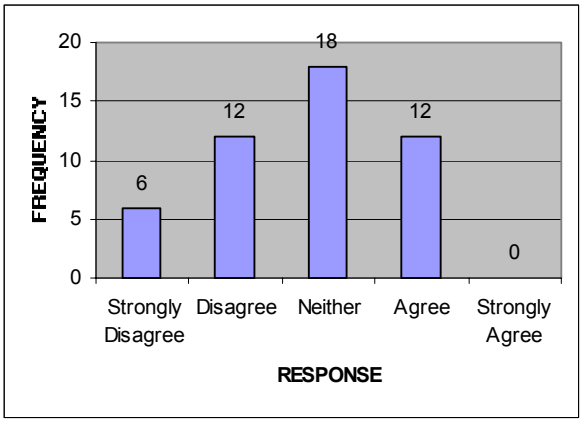

Figure 4.9: Self-Image

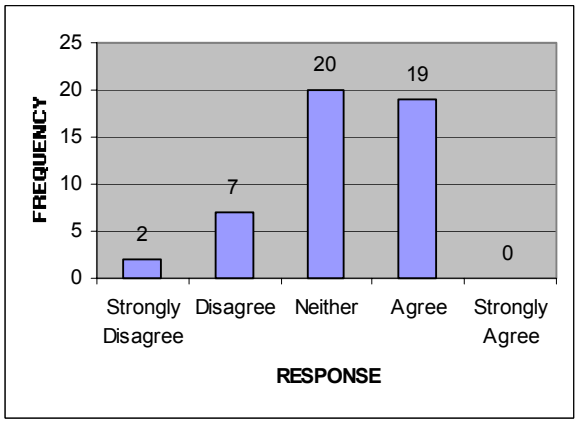

Figure 4.10: Exchange Utility

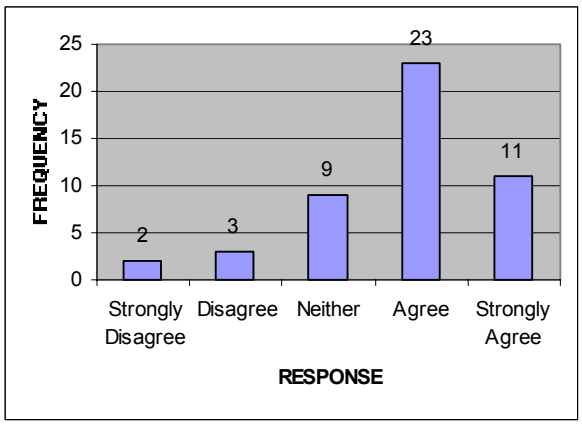

Figure 4.11: Reward

The Mean, Mode, Median, Standard Deviation, Skewness and Kurtosis for each explanation type were calculated. The results of this descriptive analysis, rounded to three decimal places, are shown in Appendix C (Descriptive Analysis of Explanation Type Responses). The mean is the arithmetic average of the distribution (Cooper & Schindler, 2003) and was the highest for the "Reward" explanation type (3.677) and the lowest for Parental Influence (1.493). The mode refers to the most frequently occurring value, i.e. the answer that the majority of participants gave for the explanation type (Cooper & Schindler, 2003). The highest mode was 4 for both "Exchange Utility" and "Reward", while the lowest mode was 1 for "Human Capital Theory", "Parental Influence" as well as "Self-Efficacy". The median is the midpoint of the distribution, i.e. the middle observation in a data-set after it has been sorted from small to large values (Cooper & Schindler, 2003). It further means that 50% of the data values are greater than and 50% are less than the median. The largest median was for "Reward", i.e. 4, while the smallest median was for "Parental Influence", i.e. 1.

The standard deviation of the sample gives an indication of how dispersed the data is from the mean (Cooper & Schindler, 2003). The closer the standard deviation is to zero the less variation in the data. Standard deviation is thus a measure of uncertainty, where the larger the value, the more uncertainty there is (Cooper & Schindler, 2003). "Teaching Style" calculated the highest standard deviation at 0.981 and has the highest data dispersion around its mean of 2.536, while "Occupational Sex-Typing" calculated the lowest at 0.599 and shows the lowest data dispersion round its mean of 1.849. This can also clearly be seen from the distribution charts in Figure 4.3 and 4.7.

The range is the difference between the highest and lowest data values in the data-set (Cooper & Schindler, 2003). "Reward" showed the highest range at a value of 4. Self-Efficacy showed the lowest range at a value of 2. When dividing the range by the standard deviation, one can form an idea of the homogeneity or heterogeneity of the data. A value between 2 and 6 (Cooper & Schindler, 2003) indicates homogeneous data, while values higher than 6 indicates heterogeneity. All the values for the data-sets calculated between 2.718 (lowest value for "Self-Efficacy") and 4.244 (highest for "Reward"). The data is thus homogenous.

Skewness indicates the asymmetry of the data about the mean. A skewness of zero means that the data is symmetrical about the mean and that the mean, median and mode have the same value (Cooper & Schindler, 2003). A negative skewness means that there will be values further to the left of the mean than to the right of the mean (longer tail to the left) and vice versa for a positive skewness. The strongest positively skewed explanation type is “Self-Efficacy” at a value of 0.436. The strongest negatively skewed explanation type is “Exchange Utility” at a value of -1.270.

Kurtosis measures the degree of “peakedness” of the data (Wegner, 2006), i.e. the degree to which the data values clusters around the mean. The kurtosis value for a normal distribution is close to 0 and is called mesokurtic. High kurtosis values indicated heavy clustering around the mean are peaked and called leptokurtic, while low kurtosis values indicate a flat distribution with far outliers and is called platykurtic. The highest kurtosis is calculated at 1.292 and is the leptokurtic “Reward” distribution. The lowest kurtosis is calculated at -1.131 and is the platykurtic “Self-Efficacy” distribution.

4.3. Hypothesis Testing

4.3.1. Hypothesis 1

Hypothesis 1 and its null hypothesis were stated as:

H_1 = Research and Development is a highly segregated functional field and male dominated, i.e. $I > 0.20$.

H_0 = Research and Development is not a highly segregated functional field and male dominated, i.e. $I < 0.20$.

From the results in section 4.1 (Table 4.1) the Karmel and MacLachlan index for Research and Development was calculated at 0.25, which is higher than the 0.20 chosen as the critical limit to indicate strong segregation. From Table 3.1 it can be seen that the field is male dominated (at 5:1). It can be concluded that the functional field of Research and Development is strongly segregated and male dominated. No further statistical testing is appropriate for this type of hypothesis.

4.3.2. Hypothesis 2

Hypothesis 2 and its null hypothesis were stated as:

H_2 = Human Resources is a highly segregated functional field and female dominated, i.e. I > 0.20.

H_0 = Human Resources is not a highly segregated functional field and female dominated, i.e. I < 0.20.

From the results in section 4.1 (Table 4.1) the Karmel and MacLachlan index for Human Resources was calculated at 0.28, which is higher than the 0.20 chosen as the critical limit to indicate strong segregation. From Table 3.1 it can be seen that the field is female dominated (at 7:3). It can be concluded that the functional field of Human Resources is strongly segregated and female dominated. No further statistical testing is appropriate for this type of hypothesis.

4.3.3. Hypothesis 3

Hypothesis 3 and its null hypothesis were stated as:

H_3 = Finance is close to being a non-segregated functional field, i.e. I < 0.10.

H_0 = Finance is not close to being a non-segregated functional field, i.e. I > 0.10.

From the results in section 4.1 (Table 4.1) the Karmel and MacLachlan index for Finance was calculated at 0.07, which means that the field is only slightly segregated with more males than females (at 15:8) (Table 3.1). No further statistical testing is appropriate for this type of hypothesis.

4.3.4. Hypothesis 4

Hypothesis 4 and its null hypothesis were stated as:

H_4= Each explanation type is an important factor when selecting a functional field.

H_0 = Each explanation type is not an important factor when selecting a functional field.

This hypothesis was tested for each of the nine explanation types. The Likert scale survey used produces interval data and, as this is a one-sample case, the parametric Z-test were used to test the validity of these hypotheses (Cooper & Schindler, 2003). The Z-test calculates the statistical significance between a sample distribution mean and a parameter. A significance level (a) of 0.05 was used.

The formula for the Z test is: $Z = \frac{\bar{X} - \mu}{\frac{\sigma}{\sqrt{N}}}$ where

$\bar{x}$ = Sample mean of each explanation type;

μ = Population mean to test against (excluding the explanation type being tested);

s = Population standard deviation (excluding the explanation type being tested);

n = the sample size, i.e. 48.

The level of significance has been chosen as 5%, i.e. a = 0.05.

The critical value for these one-tailed hypotheses was calculated by using a degree of freedom of 47 (d.f. = n – 1 = 48 – 1 = 47) and the a of 0.05. By interpolating the values of the Critical Values for Given Probability Levels Table (Cooper & Schindler, 2003), the critical value was determined as 1.68. Table 4.11 shows the calculation results for the Z-test.

EXPLANATION TYPE	$\bar{x}$	μ	S	Z VALUE	CRITICAL VALUE	RESULT
Occupational Sex-Typing	1.84896	2.48589	1.07100	-4.12027	1.68	Cannot Reject
Self-Efficacy	1.78125	2.49436	1.05504	-4.68281	1.68	Cannot Reject
Human Capital Theory	2.15278	2.44792	1.06175	-1.92585	1.68	Cannot Reject
Parental Influence	1.49306	2.53038	1.03297	-6.95741	1.68	Cannot Reject
Teaching Style	2.53646	2.39996	1.05641	0.89521	1.68	Cannot Reject
Career Advice	2.56250	2.39670	1.06537	1.07821	1.68	Cannot Reject
Self-Image	2.55208	2.39800	1.06491	1.00242	1.68	Cannot Reject
Exchange Utility	3.13194	2.32552	1.04303	5.35657	1.68	Reject
Reward	3.67708	2.25738	0.95010	10.35262	1.68	Reject

Table 4.11: Z-test Results

Only in the case of the Exchange Utility and Reward explanation types was the Null Hypothesis rejected and the Alternative Hypothesis consequently accepted, i.e. that these two factors are important when an individual chooses a functional field.

The probability values (p values) were also calculated and compared to the Z-test scores. This test indicates the extent to which the Null Hypothesis is rejected. It represents the probability of a Type I error being made (Cooper & Schindler, 2003). The p values were determined by using the Z values and the Standard Normal Table (Cooper & Schindler, 2003). Table 4.12 shows the results.

EXPLANATION TYPE	Z VALUE	P VALUE	α	RESULT
Occupational Sex-Typing	-4.12027	0.99998	0.05	Cannot Reject
Self-Efficacy	-4.68281	1.00000	0.05	Cannot Reject
Human Capital Theory	-1.92585	0.97294	0.05	Cannot Reject
Parental Influence	-6.95741	1.00000	0.05	Cannot Reject
Teaching Style	0.89521	0.18534	0.05	Cannot Reject
Career Advice	1.07821	0.14047	0.05	Cannot Reject
Self-Image	1.00242	0.15807	0.05	Cannot Reject
Exchange Utility	5.35657	0.00000	0.05	Reject
Reward	10.35262	0.00000	0.05	Reject

Table 4.12: Results of P Values

The p values concur with the Z-test that Exchange Utility and Reward are important factors when an individual chooses a functional field. It also shows that there is practically a 0% probability of a Type I error in the findings.

5. CHAPTER 5: DISCUSSION OF RESULTS

5.1. Occupational Gender Segregation in the Eight Functional Fields

The calculated segregation indices show that gender segregation does exist. The results for each functional field will be discussed. To speculate on why the different fields show integration or segregation would require a consideration of the various theories behind segregation, i.e. our explanation types, which will be discussed later. Such speculation would therefore not be helpful and will not be explored.

5.1.1. Finance

The Finance field showed almost total integration (I = 0.07) and was the subject of Hypothesis 3 for which the Null Hypothesis was rejected and consequently the Alternative Hypothesis accepted, i.e. that Finance is close to being non-segregated. This result also agrees with the findings of Statistics South Africa (2005) that the financial intermediation, insurance, real estate and business services industry is almost totally integrated (at 57.1% male and 42.9% female) (see Figure 2.6).

According to Beggs and Doolittle (1993) this functional field should, due to its non-segregation, be gender atypical in terms of occupational sex-role stereotyping, but only if it has achieved its “critical limit”, i.e. a level of gender representation at which point the occupation is regarded as atypical (Neumayer et al, 2002). This should however be investigated in a separate study as it did not form part of the scope of this study.

5.1.2. General Management

General Management showed relatively high levels of integration (I = 0.09). This field yielded mostly Executive Directors, Managing Directors, Chief Executive Officers and General Managers as job titles. Due to the current focus on vertical segregation and the “glass ceiling” effect (Businesswomen's Association of South Africa, 2006), one would expect this field to be male dominated.

This result might however be skewed by the sample's characteristics. It is possible that the gender representation of the sample does not represent the gender representation of the population (the Gauteng labour market). A possible reason for the sample having more women in this field than the labour market is that female general managers might be more prone to further their education to ensure their career advancement than men, as they face more challenges than men in terms of demand-side influences, such as employer preferences and discrimination. This proposition agrees with Anderson et al (2001) findings that women, with the same educational level than men, face unequal career opportunities. The significance of this possibility should however be researched.

5.1.3. Information Technology / Systems

Information Technology showed relatively high levels of integration (I = 0.09). Statistics from the University of the Witwatersrand's (WITS) Computer Sciences department states that only 32.7% of Computer Sciences graduates are female (2000). At that time there was a slight upward trend and it is possible that the female representation level has since improved. Updated statistics on the labour market in the ICT field is however needed for final clarification on this topic.

5.1.4. Human Resources

The Human Resources field showed strong female dominance (I = 0.28) and was the subject of Hypothesis 2 for which the Null Hypothesis was rejected and consequently the Alternative Hypothesis accepted, i.e. that Human Resources is a highly segregated functional field and female dominated. The strong female dominance concurs with Ayalon's (2003) findings that more women than men select humanitarian and social sciences occupations. As the field is female dominant it should according to Beggs and Doolittle (1993) be strongly sex role stereotyped as female, but this study did not measure gender stereotypical perceptions.

5.1.5. Marketing / Sales / Customer Service

The Marketing / Sales / Customer Service field showed low levels of segregation (I = 0.17) in favour of females. The services sector is generally regarded as female dominated (Chang, 2004) and this field forms a large part of that sector. No appropriate secondary statistical data could be found to compare to the finding.

5.1.6. Operations / Production

Operations and/or Production showed a very high level of integration (I = 0.02). What should be considered when viewing this result is the possible impact of disaggregation by sector on the segregation index. Generally the more disaggregated the field being investigated, the higher the levels of segregation (Watts, 1998). Operations is usually associated with the service sector and hence one would expect it to be female dominated, as per Chang's (2004) proposition. Production on the other hand, usually refers to the manufacturing sector where one would expect male dominance, as Manufacturing shows 65.2% men vs. 34.8% women according to the gender composition by industry type (Statistics South Africa, 2005) (see Figure 2.6).

The job titles in this field followed these general trends as the women were mostly in the services sector (e.g. Hospital Benefit Manager, Operations Analyst, Operations Manager, etc.) and the men were mostly clustered in manufacturing (e.g. Production Manager, Plant Engineer, Manufacturing Facilitator, etc.). Considering the expected male dominance of production and female dominance of operations it is possible that the combined field will show integration, as does the result.

5.1.7. Procurement / Buying / Logistics

Procurement, Buying and Logistics showed a very high level of integration (I = 0.02). Disaggregation by sector may have an impact on the Index and should be investigated in future. No appropriate secondary statistical data could be found to compare to the finding.

5.1.8. Research and Development

The Research and Development field showed strong male dominance (I = 0.25) and was the subject of Hypothesis 1 for which the Null Hypothesis was rejected and consequently the Alternative Hypothesis accepted, i.e. that Research and Development is strongly male dominated. This result concurs with Ayalon's (2003) findings that women avoid science and mathematics. The calculated segregation level is much higher than measured by the Department of Science and Technology (2006). Their survey showed that 38.3% of research personnel were women, which calculates to a segregation index of 0.04.

The Centre for Research on Science and Technology (2004) concluded that female research personnel were less qualified than the male researchers. As the sample consisted of postgraduate students it is possible that this trend is represented by the sample and therefore shows the strong male dominance.

As the field is male dominated it should, according to Beggs and Doolittle (1993), be strongly sex role stereotyped as male, which can exacerbate or maintain the segregation in this field. The stereotypical perception of the field as possibly male should be investigated in future.

5.1.9. Other Fields

The "Other" field, which includes occupations that are not bound to functional fields, were strongly female dominated at an index of 0.36, which was the highest index among the fields. The occupations mentioned for this field were varied and included lawyers, pharmacists, architects, coordinators and consultants. It is possible that the result is due to representation error caused by the limitations of the methodology. Alternatively it could be women's attempt to level the playing field by gaining an educational advantage over their male counterparts. This possible explanation should however be researched in depth.

5.1.10. Conclusion on Segregation Levels

As mentioned in the limitations of the study the composition of the sample group might not be representative of the general population. The sample, which was chosen for its convenience, is a group of MBL students, which is a post graduate degree, and the sample showed almost total integration with an index of 0.03. Anderson et al's (2001) findings indicate that women, with the same educational level as men, face unequal career opportunities. It is therefore a possibility that women have identified this issue and find it necessary to invest more in their educations than do their male counterparts. Hence, there can possibly be more females in a functional field in the sample group than in the total employment of that functional field. This can skew the indices and make it non-representative of the population. Additionally the sample size per functional field was very small and is prone to misrepresentation of the population.

The high levels of aggregation must also be taken into consideration. When disaggregating the functional fields into sectors, industry types or occupations the segregation levels should be higher (Watts, 1998). The purpose of this section of the study was to show that segregation does exist and this objective was achieved.

5.2. The Importance of the Explanation Types

The attitudinal survey on the explanation types revealed some interesting findings which will now be discussed. Each explanation type will be discussed in terms of its average outcome and, where applicable, certain individual questions will be addressed.

5.2.1. Occupational Sex-Typing

In terms of the sample's general perception of 81% disagreement (23% strongly disagreed, while 58% disagreed), this explanation type failed to explain gender segregation. When examining the results for the individual questions the first, which stated that the participant chose her functional field because it is "appropriate" for women, scored a majority (79%) disagreement, of which half strongly disagreed. It is clear that, according to the sample, what is regarded as "appropriate" work for women, does not play a role in selecting a functional field. Miller and Hayward's (2006) study showed that children stereotype occupations according to whether they should be performed by women or men. They found that these stereotypes become more liberal with age. The findings of this study agree with their research and seem to show that women generally outgrow stereotypical perceptions of occupations.

Very few sample elements (8%) agreed with the notion that their chosen functional field is "appropriate" for women. It could possibly be interpreted that, for this 8%, there exist functional fields which they regard as "inappropriate" for women. This "appropriateness" factor could possible be derived from society's preconceptions of what constitutes proper work for a "lady".

The second question, which stated that the participant chose her functional field because there are many women in the field, had no agreement from any of the sample elements. 38% strongly disagreed while 50% disagreed with the statement. It seems that stereotyping due to gender representation within the functional field (Beggs & Doolittle, 1993) does not play a role in the selection process.

The last two questions tested the notion of a gender possessing certain attributes, which the other do not, and which consequently renders one gender more suited for a particular career (Cejka & Eagly, 1999). The first question stated that the participant's functional field requires certain female attributes that males do not possess. 73% disagreed, of which 35% strongly disagreed. The second question tested the notion from the opposite perspective and stated that the participant did not choose a predominantly male functional field because of certain male attributes which she does not possess. 87.5% of the sample elements disagreed, of which 48% strongly disagreed. Cejka and Eagly's theory regarding gendered attributes does not seem to be a factor when women select their functional fields. The findings agree with Miller and Hayward's (2006) study that females believe that they should be able to perform male stereotypical jobs.

An interesting finding from the last two questions relating to gendered attributes was that only one sample element (0.02%) agreed that they did not possess the male attributes necessary to perform male dominated functional fields. In contrast 10% of the sample agreed that their chosen functional field required certain female attributes that men do not possess. There seems to be a bias in how women view themselves and how they view men.

5.2.2. Self-Efficacy

The sample generally disagreed (75%) with the self-efficacy explanation type. Not a single sample element agreed that they won't perform well in a male dominated functional field. A small percentage (8%) agreed that they are simply not interested in male dominated functional fields. This contradicts Whiston's (1993) findings that women have a low self-efficacy for typically male activities.

As discussed in the study's limitations the type of individual enrolled for MBL should be considered. These students are generally confident in themselves, which may impact on the results of this explanation type. It could also be that due to pride the sample elements do not want to admit they're lower self-efficacy.

5.2.3. Human Capital Theory

The Human Capital Theory proposes that women consider their future family obligations when choosing a career path. On average the Human Capital Theory scored 58% disagreement of which half strongly disagreed. The three questions focussed on each critical area of the Human Capital Theory.

The first question stated that the participant chose her functional field because her education and skills would depreciate less while she was tending to family obligations. 42% disagreed, while 37.5% strongly disagreed. The third question stated that the participant chose her functional field because it promised a higher starting salary, which serves as compensation for absence due to family responsibilities and coincide with the depreciation rate as wage depreciation would commence from a higher level. 71% disagreed with the statement, of which half strongly disagreed. Both these findings contradict Polachek's (1979) wage trajectory theory.

The second question tested the importance of flexibility to tend to family obligations. 58% disagreed with the statement, half of which strongly disagreed. There was a minority of 21% who agreed that flexibility to take care of family responsibilities was an important factor for them. It seems that family obligation is a concern for a number of women and requires further investigation.

As the sample elements were all postgraduate students, Anker's (1997) theory that women invest less in education than men could not be tested. The general integration of the sample group in general (I = 0.03) agrees with Bradley's (2000) findings that in Western societies women participate as much in tertiary education as men.

In general the findings agree with Okamoto and England's (1999) notion that the Human Capital theory is unrealistic in its assumption that individuals possess the knowledge required to make decisions as predicted by the theory.

5.2.4. Parental Influence

On average the sample disagreed with the Parental Influence explanation type with 27% disagreeing and 62.5% strongly disagreeing. The three questions posed to the sample covered different aspects of parental influence.

The first question, stating that the participant chose her functional field because her parents worked in the field, scored 94% disagreement, of which 60% strongly disagreed. The second question stated that the sample element's parents advised her to choose the functional field. This question scored 92% disagreement with 60% strongly disagreeing. The third and final question stated that the parents chose the filed on behalf of the participant and that she had no choice. The question also scored 92% disagreement with 71% strongly disagreeing.

The results contradict the research on the importance of parental influences (Miller, Lietz & Kotte, 2002; Farmer, Wardrop, & Rotella, 1999). It is possible that contextual factors impacted on these findings. It could be that, due to the South African history of Apartheid, previously disadvantaged parents do not have enough knowledge about the possible career choices to influence or advise their children. It could also be that they work in entry level jobs, which their children do not want to pursue and they consequently do not serve as role models in terms of career options. Alternatively, the South African cultures might be one in which children are encouraged to make their own decisions. These possible factors should be thoroughly investigated.

5.2.5. Teaching Style

As an explanation type Teaching Style gained 23% agreement on average, as opposed to 33% disagreement and 15% strong disagreement. This explanation type encompasses various secondary education factors, such as the enjoyment of subjects, having inspiring teachers who influence the pupils' enjoyment of the subjects and having female teachers as role models in the subjects of interest (Miller et al, 2002). The four questions were aimed at covering these factors.

The first question attempted to test the link between enjoyment of school subjects and ultimately its influence on the choice of functional field and stated that the participant enjoyed the school subjects that related to her functional field. 21% disagreed and 23% strongly disagreed, which indicates that enjoyment of school subjects is not a deciding factor in the selection process.

The second question stated that the teachers who presented the subjects relating to the functional field were inspiring. 31% disagreed, while 21% strongly disagreed. The agreement can however not be ignored and showed a 19% agreement and 15% strong agreement. The fourth question stated that the sample element's teachers had a profound impact on their chose of functional field. This question scored 21% strong disagreement and 37.5% disagreement, but also 21% agreement and 6% strong agreement. It seems that the way in which teachers present subjects does impact on career decisions to a degree, but it is not a deciding factor. These results contradict with Miller et al's (2002) proposition that teaching methods strongly influence students' attitudes towards subjects and towards the related career area in general.

The average level of agreement (23%) would have been higher if not for the disagreement with the third statement, which attempted to test if teachers were female. The importance of the gender of the teachers cannot be ascertained from this data. The question was structured in a way that determined the gender of the teachers rather than the importance of the gender of the teachers.

5.2.6. Career Advice

On average Career Advice had a small percentage of agreement at 12.5%, as opposed to 37.5% disagreement, of which half was strong disagreement. Based on the averages, this explanation type showed a high level of "neither" answers at 50%. In the author's opinion this is a mathematical fluke as the individual questions do not show unusually high "neither" answers (see Table 4.7). The average calculation uses a sample element's answers to all three questions to calculate an average answer and then rounds it to the nearest number. For this section this process calculated 3 (neither) as an average for the majority of the elements.

Kelly and Lee (2002) postulate that a lack of information has a major impact on career decision-making. The first question stated that the sample element did not choose another functional field because she did not have adequate career information about the other fields. The results show approximately equal agreement (46%, of which 13% were strong agreement) and disagreement (42%, of which 29% were strong disagreement). It seems that a lack of information about alternative career options does play a role in career decision-making.

What was interesting to note was that 67% of the sample disagreed that career advisers encouraged them to pursue their career interests (second question), which include 27% strongly disagreeing. Furthermore 54% disagreed with the statement that career advisors did not supply alternative options and information, of which 25% strongly disagreed. This strongly contradicts Munro and Elsom's (2000) theory that career advisors prefer to encourage pupils to pursue their existing interests instead of challenging their preferences and proposing alternatives.

From the above it can be ascertained that career advisors are challenging students to consider other alternatives, but that there is still a major lack of information about the alternative career options.

5.2.7. Self-Image

Self-Image showed 25% agreement on average and consisted of only two questions. 46% of the sample group (consisting of 40% agree and 6% strongly agree) agreed with the first statement that they chose their functional fields because it fitted well with their self-image. 35% on the other hand (21% disagree and 15% strongly disagree), disagreed with the statement. This is in line with Super's (1957) theory and McLean and Kalin's (1994) research results, which show that individuals try to match their self-image as closely as possible to an occupational image. This is definitely a topic that needs closer examination, particularly because so little literature is available on it in terms of career decision-making.

The second statement, that the participant rejected certain fields due to the associated image, scored much disagreement (at 69%, with 31% strongly disagreeing). This contradicts Edwards and Stephensons' (2002) findings that the image perception of certain sectors, e.g. I.T. sector as "geekie" dominated by "techie" guys, contributes to women's entry into certain occupations. The disagreement can either be due to the proposed "image" not actually existing or being inappropriate to the South African context or because it was not a factor that played a role in the selection process.

5.2.8. Exchange Utility

Exchange Utility refers to career and training choices being based on perceived return on investments, employment and growth opportunities as well as limiting factors such as possible discrimination (Humphries & Rubery, 1995). The explanation type had enough agreement to rate it as an important factor in the hypothesis testing (40% on average). This agreement ratio would have been much higher if not for the total disagreement with the statement that they rejected certain functional fields due to potential discrimination. The disagreement with this question could either be because the sample elements do not perceive discrimination in these functional fields or because they feel that they will be able to deal with any discrimination that they may face. The discrimination element should thus be further investigated.

The remaining two questions related to adequate return on investment on education and potential growth and promotional opportunities and both these factors proved very important with return on investment in education gaining 67% agreement (with 19% strong agreement) and growth and promotional opportunities gaining 81% agreement (with 29% strong agreement). This is in agreement with Humphries and Rubery's (1995) theory that individuals make career decisions based on exchange utility. After analysing the responses by functional field it was concluded that there were no functional fields where these two factors were rated as more important than other functional fields. In other words it seems that these two factors are necessary, but not sufficient to explain the functional field decision.

5.2.9. Reward

The Reward explanation type showed the highest level of agreement on average at 71% (with 23% strong agreement), but the interesting point here was that the sample rated intrinsic rewards more important than extrinsic rewards. This agrees with Tracey and Hopkins' (2001) findings that women view intrinsic rewards as more important than extrinsic rewards.

As in the Exchange Utility explanation type there was again no functional field where these factors were clearly more important than other functional fields. It seems that Rewards, particularly intrinsic rewards, are necessary, but not sufficient to explain the functional field decision.

5.2.10. Conclusion on Explanation Types

As discussed in the limitations of the methodology the use of a random sample poses certain limitations. The results should be viewed with these limitations in mind. As an exploratory research project the random sample serve its purpose, but for complete confidence in the results the study must be repeated on a properly selected random sample.

Another point that should be considered is that the answers the sample provided and what they actually did in practice might differ. There might be subconscious selection criteria that they are unaware of or their selection might have been many years ago and they cannot clearly remember what the criteria was that they used at the time. There might also be other influences like the fact that they do not feel comfortable admitting to using certain selection criteria, like sex-typing for example, because it does not fit with their current self-image.

Additionally, the type of women who enrol for an MBL course must also be considered. These are generally strong-willed, self-confident and ambitious women. Due to these personality traits their reasons for selecting their functional fields might differ dramatically from the general female labour population.

6. CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1. Conclusion

From the results and discussion it can be concluded that gender segregation definitely exists, but that its extent differs across these functional fields. The Finance, General Management, Information Technology, Operations and Production and Procurement, Buying and Logistics fields showed high levels of integration, while the Marketing, Sales and Customer Service field showed low levels of segregation in favour of women. Human Resources was strongly female dominant, while Research and Development was strongly male dominant. The "Other" field showed the highest level of segregation in favour of women. Although the research objective was achieved it is unfortunate that the nature of the sample create such major limitations in further investigating the phenomenon. Such issues as segregation by gender and race can, for example, not be examined.

The study tested the importance of each explanation type and found that only the Exchange Utility and Reward explanations were important factors when choosing a functional field. Although these two factors were important, they were not sufficient to explain gender segregation. Based on the averages the Occupational Sex-Typing, Self-Efficacy and Parental Influence explanations showed no agreement from any of the sample elements. Although the Human Capital Theory, as an explanation type, received little support, family responsibility was a concern for a number of women.

Similarly Teaching Styles did not rank as an important factor, but the results show that it seems the way in which teachers present subjects does impact on career decisions. Career Advice did not gain enough agreement to rank it as important, but a lack of information about alternative career options played a role in career decision-making for a number of women. The Self-Image explanation type did not rate as an important factor, but it seems that a number of participants chose their functional fields because it fitted well with their self-image. The limitations of the study must however be considered when interpreting and generalising the results.

6.2. Recommendations for Future Research

Whereas the study serves as an initial investigation into the phenomenon of gender segregation in a South African context, the limitations of the study requires that a much broader investigation of a properly selected random sample be conducted to measure the actual extent of segregation in the labour market. Such a study should also include gender segregation by racial groups to create a better illustration of the actual phenomenon.

More in-depth investigation of the existing explanation types is also recommended with specific focus on using a random sample that is representative of the labour population. As mentioned in the discussion section there were various interesting findings that need additional investigation, such as family obligation, teaching styles, self-image and career advice. It is recommended that these in-depth studies be of a qualitative nature.

Other issues that the methodology did not allow for, such as the importance of the gender of teachers, the impact of expected discrimination and investment in education need to be researched. It will also be interesting to repeat this study on males to see the difference in selection criteria used by the genders.

Culture has been sadly neglected in most segregation studies. It is possible that it impacts very strongly on a number of the explanation types studied here. It could have a major impact on Parental Influence, i.e. parental guidance vs. command, and Occupational Sex-Typing, e.g. what the culture views as proper work for a women. It can also influence the Human Capital Theory in that parents might invest more in the education of their sons that their daughters and women in certain cultures might have a stronger family obligation than in other cultures. The differences in the selection process, in terms of the various cultures and subcultures, must be investigated

This study only focussed on existing explanation types and exploratory research for other explanation types in the South African context is required. During the survey the sample was very keen to elaborate on their actual selection criteria, but the scope of the study did not allow for this. It would make sense to do this exploratory study by following a qualitative methodology.