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The Effects of Marital Status on Labour Market Participation, Employment and Wages in Lesotho

By

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DECLARATION

I, **Neo Matsoso** declare that

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Abstract

Research across the world has found that married men, are more likely to participate in the labour force, more preferred by employers and earn more their unmarried counterparts. Whereas for women, studies found that it is the unmarried women who participate more in the labour market, get employed and earn more than married women. Using the 2008 Integrated Labour Force Survey, the study aims is to analyse and estimate the effect that marital status has on one's labour market participation decision, likelihood of finding employment and level of earnings in Lesotho. This topic is deemed important because it gives some insight into the male-female differentials in labour market attachment and wages in Lesotho. It has been hypothesised in the literature that part of the wage differential observed between men and women can be attributed to the specialisation in gender roles by married men and women. This study thus evaluates this literature in the context of the Lesotho's labour market. The study extensively test a number of hypotheses that have been developed in the literature to explain the relationship between marital status, employment and earnings. The hypotheses are that (1) marriage increases labour force participation, (perhaps employment) and earnings for males but (2) marriage decreases labour force participation, (perhaps employment) and earnings for females. In order to test these hypotheses, probit models were used to estimate the determinants of labour force participation and employment, as well as using interval regression to estimate earnings equations amongst the employed. Results shows that though marital status plays a role in labour market attachment and wages, not all marital categories were important in determining participation, employment and earnings. This suggests that there are other important factors which determine labour market outcomes other than marital status. Educational, household, age and occupational variables were also found to be important in the determination of the three stages of the labour market. However, in all the three stages monogamous marriage was the one that was significant for both men and women in determining participation, employment and earnings.

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Chapter one: Introduction

Up until the early 1970s, studies that looked at labour market determinants, patterns and characteristics mainly concentrated on the developed countries. It is through the theoretical and conceptual frameworks of these studies that a platform was created for subsequent studies to be carried out in developing countries from the early 1970s onwards. This shift in focus was largely initiated by the International Labour Organisation (ILO) (Fadayomi and Ogunrinola, 2005). In labour economics one of the long-established yet unresolved questions has been on whether marriage causes the rise in the wages of men. Studies using cross-sectional data on wages have consistently found that married men tend to earn significantly greater wages than those who are currently not married (Antonovics and Town, 2003). This dissertation therefore sets out to examine what impact marital status has on the labour market outcomes for men and women in Lesotho, a country where no such studies currently exist.

There are various reasons why this topic of marital status and labour market activity is of great interest, and particularly for a small unknown and under-developed country. One key reason is to enhance the understanding of the labour supply patterns of men and women, as this will be crucial in understanding the distribution of the labour force for policy formulation. A second reason is to contribute to knowledge about gendered patterns of social and economic behaviour, which is an under-researched area in developing countries.

Marital status has an important effect on demographic and economic variables. One's marital behaviour has the ability to affect a number of key factors in a country. For instance, marital status has an impact on the population growth rate, supply of labour, wage rates and migration (Keeley, 1979). Existing research has also emphasized the advantages that are associated with marriage: researchers have found that marriage has a positive impact on one's health and level of happiness. Marital status has also been found to have an effect on the participation, employment and earnings for both men and women (Bardasi and Taylor, 2008).

Economic activity in Lesotho historically used to be dependent on remittances from Basotho working in South African mines and on receipts from the Southern African Customs Union (SACU). However, in recent years retrenchments of mine workers due to the shrinking mine sector and declines in SACU revenues have necessitated substantial changes in the economic structure (Ketso, 2013). Unemployment, currently stands at 25.3 percent, is among the biggest challenges facing Lesotho. There are also major gender imbalances in the labour market, with 72.6 percent of men but only 55.3 percent of women participating in the labour force (Bureau of Statistics, 2008). Some of these inequalities may be a result of attitudes towards traditional gender roles. This dissertation therefore sets out to examine what impact marital status has on the labour market outcomes of men and women in Lesotho.

Labour market participation rates in Lesotho, as is the case in many other countries, show that men tend to participate in the labour market more than women (Bureau of Statistics, 2008). Further, the distribution of employment in the country is such that the private sector is the largest sector that provides employment. It contributes 30 percent of the total national employment. This is followed by the private sector household employment which contributes 22 percent, the public sector employs 5.5 percent, 1.6 percent is contributed by parastatals, and 22 percent is contributed by the informal sector (Bureau of Statistics, 2008).

Given these employment distribution per sector, unemployment is still among the biggest challenges in Lesotho as previously indicated. The macro-economic policies and programmes that have been used in the past have not fully addressed ways to promote employment. Moreover, the national development strategies in Lesotho do not have employment creation as their central objective, which has worsened the unemployment situation in the country (Ketso, 2013).

The two concepts of labour force participation and unemployment will play an important role in the study hence it was important that they were discussed. The two go hand-in-hand, as when analysing unemployment data it is important to look at participation rates because the figures for the unemployed reflect the number of people searching for employment but are unable to find a job.

This dissertation will be the first to attempt to model the effects for marital status of men and women on their labour market activity in Lesotho. Specifically, the dissertation will investigate the effect of marital status on labour force participation, employment and earnings using cross sectional data from the 2008 Integrated Labour Force Survey compiled by the Bureau of Statistics Lesotho.

The study addresses the following specific objectives:

- How does economic theory account for possible differences in labour market outcomes on the basis of marital status?
- On average, are there differences in labour market participation, employment and earnings between individuals with different marital statuses, and if so, do these differences vary by gender?
- To what extent do differences in labour market outcomes by marital status persist, for both men and women, after controlling for observable characteristics and sample selection?

One of the reasons why this topic of marital status, labour force participation, employment and earnings is deemed important because it will give some insight into gender behaviour and male-female wage differentials in Lesotho. It has been hypothesised that part of the wage differential between men and women can be attributed to the specialisation in gender roles by married men and women. For instance, it is argued that the hourly earnings of unmarried women are greater than married women even when they work similar hours and possess the same market capital. The difference is caused the fact that child care and other home activities cause married women to look for convenient work that requires less energy but also pays less (Koreman and Neumark, 1990).

This study will also shed light on a number of issues that are of interest to governments. Understanding how labour supply responds to socio-economic factors will allow planners to anticipate the effects of changes in economic conditions or in government policies. Additionally, analysing labour supply, employment and earnings gives important information on issues such as the relative return to human capital, as well as contributing to the understanding the distribution of income and poverty issues.

This dissertation consists of five chapters, where the first outlines the aim and objectives of the study. Chapter 2 addresses the first specific objective by reviewing the economic theory of marriage, including the potential gains from marriage and the existence of a marriage market, and its potential impact on labour market outcomes. The chapter also discusses existing empirical literature on labour force participation and employment for men and women according to their marital status. It further examines how men's and women's wages may be influenced by their marital status category. Chapter 3 describes the Integrated Labour Force Survey data used in the study, the variables of interest and how the sample was constructed. It presents descriptive statistics for the sample, indicating how labour market participation, employment and earnings differ by marital status and gender. It therefore addresses the second specific objective of the study. The fourth chapter outlines the econometric methodology, estimates the models and discusses the results obtained. In particular, models are estimated for the probability of participating in the labour force, being employed, and for the level of earnings, with marital status being the key variable of interest. The models also control for sample selection. This chapter thus tackles the last specific objective. The final chapter summarises the dissertation and its findings, as well as presenting recommendations for future studies and for policy.

Chapter Two: Literature Review

This chapter will outline a wide range of both theoretical and empirical literature relating to the effects of marital status on labour market access and outcomes. The theoretical literature will look into the theories of the determinants of labour supply and marriage, both of which can be seen as search models. The differences between these models are through how they describe the search behaviour and the assumptions that they make about the seeker's time horizon and the knowledge s/he has about the conditions in the market before they enter. Individuals also have a reservation threshold below which they will not enter the market. In the labour market, this is expressed in terms of wages, and in the marriage market it is in terms of utility (Gronau, 1974).

This chapter will begin by reviewing the economic theory of marriage, including the potential gains from marriage and the existence of a marriage market, and its potential impact on labour force participation. Section 2.2 will review how economic theory describes the factors that influence the participation into the labour force both for men and women, and particularly how this relates to marital status. These factors will be extended to explain what makes men and women employable in the labour market. Section 2.3 will further examine why marital status might influence earnings, and why the effect might differ by gender. In Section 2.4, the paper will review the existing empirical research on the effect of marital status on labour force participation and earnings. Due to the lack of research done on this study, the main papers reviewed will be those from developed countries. Finally, Section 2.5 concludes.

2.1 The economic theory of marriage

A behaviour which was ignored by the economics literature for many years had been that of marriage. Marriage can be defined as a partnership for the purpose of joint production and consumption. An economic theory to explain marriage was pioneered by Gary Becker in 1973, who argued that marriage, like any other behaviour involves the use of scarce resources. Marital patterns have an impact on economic aspects such as leisure allocation together with other household activities, income inequality, women's labour market participation, growth in population, and the selection of natural genetic characteristics over time. Marriage has also been found to have a positive impact on one's reported happiness and health (Becker, 1973).

To explain the role that marital status plays in influencing the three economic variables earnings, employment and labour force participation, two main principles are put forward. The first principal argues that marriage is voluntary to rational people getting married or their parents. Thus marriage is subject to the similar tools of economic analysis like other economic phenomena's. It can be argued that marriage occurs if it increases the level of utility of those

deciding to get married or their parents beyond their utility level had they chosen to be single (Becker, 1973). Economically, marriage is a voluntary action that people decide to undertake so as to have joint production and consumption. Therefore, marriage is comparable to other goods and services in the market, as people also seek to maximise their utility subject to market constraints (Weiss, 1997). However, it can be also be debated that the desires of children and their parents do not always coincide, which could mean that parents may or may not affect the household decision making and labour market decision particularly post marriage for their children (Dauphin et al., 2008). Secondly, men and women contend when they try to find their suitable partner, which can imply that a marriage market exists. The aim of each individual is then to find the best partner, subject to the constraints that prevail in the market though existing conditions (Becker, 1973). It is through these two principles that one can explain why a large number of adults get married.

2.1.1 The gains from marriage

Further, to understand why individuals decide to enter into marriage, it is important to understand the economic gains of being married as opposed to being single (Weiss, 1997). The first potential gain is that of children. One of the main reasons that people marry is to have a complete family. Even though in recent times children are often born and raised outside marriage, family still has an advantage in child bearing and raising activities. One advantage of having a family is that parents will care for their own children. It is through this mutual interest that is efficient for parents to determine how much to spend on their children. Children can be seen as a public good to parents, so an efficient allocation of resources of the family will need cooperation between the parents for private and public uses. Moreover, children can be viewed as assets since it is believed that they will provide continuity of the family from one generation to another for personal immortality. Further, they are seen as social and financial support systems for their parents in the later years of their life (Neal et al., 1989). However, if the parents are living separately there will not necessarily be coordination on the expenditure on the child (Weiss, 1997).

The second advantage of marriage is labour division, where family members match their labour market activities so as to benefit from areas where they have a comparative advantage and increasing returns. For example, one partner can be engaged in the labour force and the other in home production. This can be economically efficient when there is a difference between the partners in potential market earnings or in household productivity. Each one can be able to specialise in the activity where they are most productive (Weiss, 1997).

Thirdly, marriage also allows for resource sharing. For instance, two married people can double their purchasing power as opposed to a single individual. There is a joint consumption

of non-rival goods like household expenditure. Another advantage is of credit and investment. Married couples can jointly take upon a loan for investment purposes. For example, one partner can work while one invests in human capital in the form of schooling, and future returns from this investment will be shared by the couple. Lastly, there is a pooling of risk in the family. The risk is spread across the household should any idiosyncratic shock happen to any member of the household. This can happen in instances where, one partner works while the other is unemployed or ill (Weiss, 1997).

2.1.2 The marriage market

Marriage can be seen to have its own market which is comparable to any other market. It can be argued that there is a mutual dependence between marriage and the labour market. The decision one makes on their marital status can be translated into labour market terms because marriages are seen as exchanges of household labour. This labour benefits an individual's potential or actual spouse with responsibilities such as cooking, taking care of children, gardening or counselling. This type of labour is carried out for a longer period than an individual would spend on such activities if they were living alone. Traditionally, men are seen as demanders of women's household labour and women supply the household labour (Grossbard-Shechtman, 1984).

The marriage market is used to show that the pairing of the human population is highly systematic and structured. There is a wide range of potential partners to choose from. This creates competition for a potential partner and for the gains from marriage (Weiss, 1997). When an efficient marriage market exists, it will develop shadow prices that guide those participating to get married and be able to maximise their expected utility (Becker, 1981). People will then decide to marry if and only if their expected utility of being married is greater than if they had chosen to not get married. Equilibrium in the marriage market requires that there are the same number of women and men that want to marry, and that those participating that remain single should have an income as large as they would have had they decided to get married (Becker, 1981).

To understand the marriage market and also to account for the incomplete information that prevails in the marriage market, the analysis of matching and search models is used. Matching models aim to outline the preferences of prospective matches in forming a stable assignment. This supports the assumption that marriage is voluntary. Therefore, an assignment will be stable if there is no married individual who prefers to rather be single and no two people, either married or unmarried prefer to form a new union. The matching process is characterised by information about potential matches being scarce. While this matching takes place, participants need to spend money and time so as to find their best option. The benefits from

marriage and the distribution of matches can be portrayed through equilibrium, influenced by search costs and other participants' search policies (Weiss, 1997).

The gains that one obtain from marriage depend on the combination of each mate's characteristics. For instance, the gains to marriage can depend on the earnings and human capital that each spouse has, and their relative wage rates. Therefore, since these gains arise because of a combination of the other spouse's and one's own characteristics, single individuals will expand their resources so as to find a suitable partner by searching (Keeley, 1974; Keeley, 1979).

The search model can be characterised in two ways. Firstly, a single individual makes a decision on whether or not to enter in the marriage market and use resources searching for a partner. Secondly, if the individual chooses to enter into the marriage market, then an optimal sequential search is pursued for a partner. Searching for a partner can be similar to searching for employment. One goes into the market to search for a partner. If the gains exceed the costs then the person searching will have a reservation offer in which to accept. This reservation offer is where the benefits of searching for a partner equal or exceed the cost of searching. This is determined by equating the expected marginal benefits from searching to the marginal cost. Thus, only marriage offers which equal or are greater than the reservation offer will be accepted by the searcher (Keeley, 1974; Keeley, 1979).

However, marital formations differ according to different societies and they tend to change over time. In some nations the rate of divorce is high, in others divorce rates are growing at an escalating rate, while in other countries divorce is still impossible. The nature of the marriage process also differs according to culture, where in some societies a bride brings a dowry, in other places the groom pays a bridal fee, while others marry because of the love between them and disregard any financial bargaining (Becker, 1973).

Many African countries practice the tradition of a bridal wealth where the prospective groom has to pay a fee to the bride's family, and this is the only way in which a marriage can be validated. Lesotho, like many other countries including South Africa, still practices this tradition. Due to their proximity and cross-cultural practices, the tradition of bridal wealth practice in Lesotho and South Africa are very similar, and because of lack of data for Lesotho, most of the reference will be made using South African data. There are two legal systems regarding marriage that exist in Lesotho. These systems are the civil and customary law, the latter of which is the dominant in most marriages in the country since the Marriage Act of 1974 till to-date. For marriage under customary law to be deemed complete, it requires that there be an agreement between the parties deciding to get married, an agreement between the

parents of the parties on the marriage and amount of the bridal fee (*bohali*), and lastly there is a payment of a portion or the full fee (Poulter, 1977).

One of the main reasons why there is a custom to pay a bridal fee is so as to provide the parents of the daughter with a compensation for the loss of the productive and reproductive labour power of their child. This exchange also expresses a commitment to a future reciprocal relationship between the family of the bride and the groom (Posel and Rudwick, 2012).

Customary marriages for Basotho are potentially polygamous. A man has an option to enter into other marriages but he is required to consult with his other wives, and this depends on the overall needs of the family. Each wife in a polygamous marriage has her own property in a form of a house (Legal Resources Centre, 2011).

Traditionally, the customary marriage used to happen through the method of elopement of the bride from her home. She would then be kept at the groom's home overnight. Thereafter, the parents would reach an agreement to consent to the union. The common practice was that both families agree on the bridal fee (*bohali*), which was paid in the form of cattle. The groom's family was then required to present twenty to thirty cows to the bride's family as a bridal fee. It is only after the payment that the bride will officially become part of the family through the method called "*bekoa*" (received and educated as a newly married daughter-in-law) (Poulter, 1977).

The tradition of bridal fees being in the form of cattle has changed in recent years. The fee is now usually in the form of cash payment. The costs are quite high, relative to household incomes, as the groom's family is required to pay a cash payment equivalent to twenty cows. With such high costs, men need to work first before deciding to enter into the marriage market. These high bridal fees affect the rates of marriage and lead to other forms of partnerships that require no fees, such as cohabiting (Juma, 2011). Studies have shown that the traditional practice of bridal wealth has now become commercialised as it now acquires more of an economic imperative. Although there are not national data collected in Lesotho on bride wealth payment, the average amount paid is approximately 6 to 10 cows, amounting to about R15 000 to R30 000 which is not very different from that paid in neighbouring South Africa. This is roughly two to three times the average monthly earnings of a man working in the public sector in Lesotho who earns roughly R8 000 (Casale and Posel, 2010; Juma, 2011).

The second observed changed is that the payments have become individualised. In the past, the bridal fee payments were done by drawing from the herd of cattle belonging to the father of the prospective husband, but now particularly in urban areas payments are made in cash and they require no assistance from the father (Posel and Rudwick, 2012).

The introduction of civil marriage under the Marriage Act of 1974 has also given people an alternative to deal with the high cost of marriage. Further, the respect and importance of traditional culture among young men and women has declined. Marriage can thus now be deemed complete even without having complied with the customary law requirements (Juma, 2011).

For those still believing in the customary law, it is be expected that due to the bridal fee practises in Lesotho, mostly high earning men would get married, rather than low earning or unemployed men. This would mean that labour market outcomes form a constraint in the marriage market. Those who are cohabiting would be expected to earn less than married men, as these forms of unions are not as stable as marriage, and require lower specialisation (Casale and Posel, 2010). Due to the lack of data on this issue of bridal wealth in Lesotho, the discussion will not be furthered more in the following sections. These relationships between marital status and labour market status are discussed in more detail in the next sections.

2.2 Theory of labour force participation

The model of labour supply is developed in this section. This basic theoretical framework entails the leisure-labour choice model. The same framework can be applied to both participation and hours worked dimensions. For the purpose of this study, two separate aspects of labour supply. The first will be labour supply measured by working hours and the second aspect will cover labour force participation, (Blundell, 1995).

Labour is one of the most abundant factors of production and it can be concluded that in the long-run the well-being of a country primarily depends on the people's willingness and ability to work. There is a heavy reliance on the production of goods and services from market activities required for any economy to sustain itself. Although there are other ways in which individuals can spend their time without being involved in work for pay, such as home production or consumption of leisure. The decision to participate in the labour market is ultimately a decision on how to spend time. People either spend their time on pleasurable leisure activities or use the time to work. Furthermore, when someone decides to work, they choose between home production and working for pay in market related activities (Ehrenberg and Smith, 2009).

Labour force participation rates give an indication of the extent to which the population that is in the working-age groups are in the labour force by participating in, being available for paid work or self-employment. The decision to participate in the labour force for the working-age adults is one of the key determinants of the actual size of the labour force, the unemployment level and the total unemployment rate at a given point in time. The labour force participation

rate is also important when forecasting macroeconomic and labour market performances. Further, it has a major implication for the distribution of income as those who do not participate in the labour force do not have direct access to income yielded from the labour market. However, they may have indirect access through the other members of the family. Alterations in the participation patterns are often expected to result in changes in the demands placed on other forms of income support (Dixon, 1996).

When analysing the labour force participation, theory argues that when it comes to married women, the decision to participate is three-fold, and therefore cannot be only looked at in terms of time allocation between leisure and market activities. Household work is a third activity to which married women may devote their time. Married women are thus faced with choices between leisure, household work and working in the market (Mincer, 1962). The choice that a woman makes among these activities is generally influenced by both her family and her own abilities. The woman will decide to participate in the labour market after looking at her family resources and her own potential earnings. If the family resources are high, it will hinder the woman's involvement in the labour force. For example, if the husband's earnings are high, it will lead to low participation chances of the woman into the market (Lee, 1997).

The greater the demand in the household the more likely the woman is to stay at home. However, if these home activities can be substituted in the form of maids, dishwashers and other electric appliance, then the woman is likely to participate less in household production and more in the labour market. Such a division of time will be reached after comparing the cost of household production to the earnings that could be available in the market. She will thus choose to be in a place where she will be more productive (Lee, 1997). The neoclassical theory of time allocation is used as one of the main theories to explain an individual's labour supply decisions. The individual makes a decision on whether to consume more goods or to consume more leisure (Cahuc and Zylberberg, 2004). Moreover, the theory states that an individual values their time according to preferences that maximise their utility. For an individual to make their decision on whether to participate in the labour market or not, they compare the value of the time they would spend in the labour market to the value derived from participating in non-labour market activities. The chosen activity will be the one with the highest value. The value of the labour market activities is measured using the prevailing wage rate in the market, whereas the value of non-labour market activities is determined by the preferences and tastes of the individual. The other determinants are the demands placed on an individual's non-labour market time, which includes things such as number of children and number of dependents in the family, and the non-labour market income. Traditionally, women are seen as caretakers of households and thus the value put on household activities tends to be higher than the value on participation in the labour market. Another factor that the neoclassical theory

argues shapes an individual's choice to participate in the labour market is the amount of one's human capital. (Guven-Lisaniler and Bhatti, 2004). The theory of human capital states that individuals invest in education and training in the current period so that they can have higher returns in the future. In the labour market, this means that people acquire education and job specific training, which will mean that in the future, their labour market earnings are going to be higher. Further, those with more human capital (education and training) are more likely to participate in the labour market as their earnings prospects are now attractive (Ehrenberg and Smith, 2009).

In addition, to making a choice on how to allocate time so as to maximise one's utility at a given wage, they also make the choice of time allocation between leisure and work in response to increases in wages. If it is assumed that leisure time is a normal good, then an increase in the wage rate will lead to a negative income because the demand for leisure increases while that of work declines. Further, an increase in income will lead to a positive substitution effect: when income rises, one will allocate more time to work as opposed to leisure (Mincer, 1962). The idea here is that the substitution and income effects work in opposite directions. Either of the effects can dominate, and it is often thought that the substitution effect will dominate at lower wages. Therefore, an increase in wages increases labour supply. The income effect dominates at higher wages, where a wage increase reduces labour supply (Cahuc and Zylberberg, 2004). Furthermore, the fraction of time allocated to either work or leisure given the change in the wage rate will depend on the relative value that is placed on the additional income and on leisure by each individual (Fadayomi and Oguntinola, 2005).

Working is viewed as a bad which is necessary so as to create income needed for consumption. Therefore, the neoclassical theory of labour supply is based on the trade-off between consumption and leisure where an individual is faced with limited time which they can allocate to leisure and work. The optimal choice of labour supply is where an individual maximises utility. This accounts for the fact that when one decides to work it means a reduction in leisure time, which translates to utility loss caused by working (Ratzel, 2009).

Another way to look at labour supply is to consider the role that family plays. However, it may prove to be complicated to estimate models of family labour supply because there are personal characteristics that affect factors such as the formation of marriage and the stability of a marriage, which are likely to be related to factors that determine the supply of labour. This has proven to be a problem if the way in which individuals are sorted into households is not random (Lundberg, 1998).

However, in almost all societies family is central not only in the coordination of consumption and production but it is equally important in reproduction and child rearing (Schultz, 1990).

This approach of analysing labour force participation at family level was developed mainly due to the increased participation in the labour market by married women. The neoclassical theory on labour supply states that the observed increase in the number of women entering the market is because of the increase in the market wage opportunities for women or their opportunity cost of the time they spend in non-market activities. The other reason for using this approach is that in standard economic theory, the analysis of the supply of labour to the market is in terms of consumption theory, which shows that there is some form of joint decision that households undertake. The outcome of this decision often leads to women supplying their labour in home production rather than market activities (Mincer, 1962).

However, it may be the case that instead of an individual maximising his or her own utility, there is some sort of joint decision-making that happens so as to decide on how time will be allocated by each member of the household. What often occurs is that partners find it beneficial for each to specialise in the work that has to be done either in the market or at home. Often it is found that one partner bears more responsibility in work or household activities than the other partner (Ehrenberg and Smith, 2009). Further, the neoclassical model of the family presumes that families behave as if they are trying to allocate the members' time and other endowment so as to satisfy the common set of family preferences. This is assumed to be possible by pooling resources and agreeing on the joint preferences (Schultz, 1990).

The standard neoclassical model of labour supply including the family framework was formulated to explain the labour market behaviours of developed countries. It excludes the fact that developing countries labour markets are formulated differently (Rosenzweig, 1980). For instance, there are societies which are impoverished and survive on agricultural activities and child labour, which are mainly unskilled but which remain valuable to family resources. The neoclassical theory also predicts how adult men's wage rates and child wage rates are both positively related to fertility and negatively to the time allocated to production in the market by women (Schultz, 1990).

2.3 Marital status and earnings

There are a variety of theoretical reasons why earnings might differ by marital status. This section considers these reasons, and why they might differ by gender, while the section that follows examines the empirical evidence.

2.3.1 Men

Many established studies on cross-sectional wage and income determination have shown that on average married men earn more than their unmarried counterparts (Hill, 1979; Pfeffer and

Ross, 1982; Cohen and Haberfeld, 1991) and these studies will be reviewed further in sections 2.4.2. There are two theoretical hypotheses that have been put forward to explain the premiums of marital earnings. The main hypothesis is proposed by Becker (1973), and it is based on the household production and time allocation models. It argues that married men are more productive than unmarried men. What marriage does, is to allow for economies of scale in household production which leads to labour specialisation. Men thus tend to specialise in market activities and women in household production. This causes married men to accumulate more human capital in market activities compared to single men, which translates to increased productivity and wages (Casale and Posel, 2010).

To further explain the observed positive relationship between the earnings of men and marital status, it requires that one classifies whether it is due to the wives' effect on the wages of their husbands in the labour market or it is because of the process of matching that occurs in the marriage market (Cohen and Heberfeld, 1991).

The effect that wives have on the wages of their husband could be one of many reasons why employers reward married men with higher wage premiums. Others maintain that there is a response by employers to the actual increase in productivity that is caused by the wife's existence. Wives are argued to improve the decision making process in the household, motivate their husband's to place more effort into their jobs, provide emotional support and advice on matters relating to the job, as well as performing duties that are directly related to the job of the husband (Cohen and Heberfeld, 1991).

Further, marriage also creates conditions in which human capital accumulation becomes more efficient for married men than it would for someone who is not married. This means that marriage increases the time one has available to invest in human capital specific to the market. Alternatively, a wife can contribute directly to her husband's human capital through the supply of flow services in the form of helping to finance the accumulation of human capital because the wife may be working (Bardasi and Taylor, 2008). Given these explanations of the effect that wives have on the earnings of their husbands, it would then be expected that divorce, separation or death of the wife should lead to a decline in the earnings of the husband. There would no longer be a wife enhancing the productivity of the husband which would translate into a decline in his performance at work and hence a decline in earnings (Cohen and Heberfeld, 1991).

An alternative hypothesis for the marital wage premium involves the matching process in the marriage market. This hypothesis states that, there is a selection of men into marriage due to individual characteristics that are unobservable. These characteristics are also seen to be rewarded by the labour market, which then leads to increased wages. These personal traits

that are highly valued in both the labour market and the marriage market include among others ability, attitude, self-esteem, congeniality, loyalty, honesty, dependability, leadership, industriousness, and even physical appearance (Casale and Posel, 2010). Another explanation is that men who are not married and remain single might do so because women accurately think that they will not achieve economic success. Therefore, high earning men are more likely to get married as they are more attractive in the marriage market than other men. This could mean that it is possible for the wages of men to affect the propensity to get married and divorced (Gwartney and Stroup, 1973).

Another phenomenon that may explain this observation is that of discrimination and market signalling. Employers may discriminate in favour of married men, not necessarily because they are more productive but mainly because married men are seen to be more stable and responsible as they have a family to support. Unmarried men on the other hand are seen to be in lesser financial need. In some instances, employers view marriage as an indicator for higher productivity because marriage is related with unobservable characteristics such as capability, trustworthiness, reliability, dependability and determination. This discrimination would be observed when employers determine promotions and raises. They may decide to discriminate against unmarried men: employers may view unmarried man as more likely to job-hop than married men as they are less stable (Cohen and Heberfeld, 1991; Bardasi and Taylor, 2008).

These explanations for why married men earn more than unmarried ones can be challenged. Specialisation theory has been argued to be the main driving force to explain wage differences between never married and married individuals. However, with shifting cultures, this could change. For instance, in recent years household activities have their own market. An unmarried man no longer has to clean his own house or do laundry, but rather he has an opportunity to hire a maid, or can always decide to eat at restaurants. Moreover, on average income levels have increased, and this allows people to outsource home activities to the market (Cohen, 1998; Kist and Hu, 2010).

Furthermore, more women, married and unmarried, now spend more time in the work place than in the past due to increased financial and social benefits, and changes in gender roles. This means that the specialisation that was previously observed does not happen to the same extent, so the gains from specialisation are likely to have decreased. Also, many societies are experiencing an increase in the number of women who are the higher earners in marriages. With this comparative advantage that some women have, men would spend more time specialising in household related activities than in market activities and human capital accumulation. This will then be expected to have a negative impact on such men’s marital

earning premium due to the decline in market specialisation (Killewald and Gough, 2010; Kist and Hu, 2010).

One further observation is the increased divorce rates over time: these might cause people not to specialise because they know they are likely to end up single again and would resume working in the market and at home. This means that divorce will have a negative effect on gains from specialisation. However, studies have not intensively estimated the effect that a divorce has on men's wages. When a divorce occurs men become great financial need as there are usually in the financial implications to both parties when divorce settlements in process, (Pfeffer and Ross, 1982; Kist and Hu, 2010). The signalling hypothesis likewise would not necessarily result in a decline in the wages of a man after a divorce as the employer would have already gathered enough information on the performance of the man. This means that employers will not rely on marital status as a signal for the particular worker's performances (Pfeffer and Ross, 1982; Cohen and Heberfeld, 1991).

2.3.2 Women

In contrast to men, most research finds that unmarried women earn more than married women (Goldin and Polachek, 1987; Korenman and Neumark, 1992). Studies show that when women delay the age at which they get married, this increases their earnings. Unmarried women may be more dedicated to building their careers over their lifetime.

One theory which can explain why married women earn lower than unmarried women is the human capital theory by Becker (1985). The theory predicts that married women spend more time outside the labour market and more involved in activities such as childbearing and childrearing. It is this loss in labour market experience that explains the wage gap between married women and other women. This is argued to be the case as married women are more likely than unmarried women to have children and household duties which take them off the labour market (Waldfogel, 1997).

The theories that explain how marriage affects male wages apply differently to women. Firstly, marriage has a different signal to employers when women than men apply for employment. Employers may discriminate against married woman in favour of unmarried ones. Employers may believe that married women have other additional household responsibilities which will interfere with their work. Another reason for this discrimination is that married women are more likely to leave the labour market to have children than women who are not married (Chiodo and Owyang, 2003).

Secondly, marriage may not make women more productive in the labour market. Rather, they may spend more time in household production than unmarried women, which leads to lower wages. The specialisation of married women in this case is thus shifted to building a home. Further, it has been found in empirical research that regardless of whether a woman is employed, she still spends time on household chores (Chiodo and Owyang, 2003; Gupta, 2006).

However, there is an alternative way in which the relationship between the marital status and earnings of women can be explained. There are three parts to this explanation. Firstly, it can be argued that those women who decide to get married are different than those who do not, and that these differences are correlated with the earnings of women or their growth in wages. This suggests that there is no causal relationship between women's earnings and family status. Instead, this is a selection based argument. If women's selection into marriage happens in a similar manner to that of men, it could be possible that women who are married also possess unobserved characteristics which will make them valuable to employers and their potential marriage partners. However, for women a marriage premium is not observed, which could mean that the unobserved characteristics only make women attractive in the marriage market, such as commitment to family life, and not in the labour market. Secondly, it can be argued that when women experience a transition in their marital status, this could alter their earnings through a productivity alteration. It is however observed that, when women get married they increase their participation in non-market activities, which would reduce their productivity and hence earnings. It is also argued that there are other factors that can change one's productivity other than through specialisation, such as increased motivation. Women may also be able to leverage the social and human capital of their husbands so as to receive increased wages (Killewald and Gough, 2010).

Lastly, theory has long argued that the relationship among married individuals and their earnings may be due to discrimination mainly against married women. Existing literature shows that employers discriminate against mothers because they are seen to be less productive (Goldin, 1988; Waldfogel, 1998). This means that married women will be discriminated against as employers can perceive them as potential mothers. However, some employers may not take to heart the marital status of women. Additionally, governments may have policies which help protect women in the labour market, and thus prevent discrimination on the basis of marital status (Killewald and Gough, 2010). Therefore, the effect of marital status on wages for women, if any effect exists, is less clear in theory than it is for men, and remains an empirical question.

2.4 Empirical literature on marital status and economic outcomes

The previous two sections examined why labour force participation and earnings might differ by marital status. However, the direction of the effect was not always theoretically clear, especially in the case of women. This section therefore reviews empirical studies on these relationships.

2.4.1 Labour force participation

Various studies have shown that participation behaviour and its determinants differ systematically by gender, age, and that changes in participation rates for different groups therefore affect aggregate participation through changes in demographics. Naturally, participation behaviour varies also across other personal characteristics, such as marital status, education and skills, and immigrant status (Balleer *et al*., 2009). Empirical studies of this relationship usually produce their findings either by comparing aggregate estimates of participation rates across different demographic groups, or by estimating participation at the individual level using logit or probit analysis.

There have been substantial changes over time in the patterns and rates of labour force participation across the world. The participation rates of young people have declined while there have been increases in the participation rates of workers between the ages of 60 to 64. For the adults in their prime-aged years between 24 and 54, the participation rate for men who are actively engaged in the labour market has fallen, while for women in the same age group increased their participation rates (Dixon, 1996; Balleer *et al*., 2009).

Historical studies enable an understanding of how labour market behaviour has changed over time. In her study of understanding the gender gap that existed in the labour force of the United State, Goldin (1990) stated that in the 1900s married women did not work. Therefore, an employed married woman in the 1900s was an indication that her husband was not able to adequately provide for the family. What was also observed during this period was women worked were single or never married and they were mostly employed in low paying jobs such as domestic servants, manufacturing or agricultural sectors. However, in the 1950s, as the level of education for women improved, it raised their employment and varied job opportunities. It was then possible for women to work regardless of their marital status and their value for labour market time increased. Further, married men had a two percent higher participation rate than single men, with participation rates for married men being 98 percent. They also found that unmarried females were only 5 percentage points less likely to work

when compared to unmarried men. The study revealed that married women had the lowest participation rate of 65 percent.

In the European Union, there has been a decline over time in the gender gap between men and women in terms of participation in the labour market. In 1980, the gender gap was roughly 30 percentage points and by 2000 it halved to 16.7 percent. This was attributed to the rising number of women entering the labour market and the decline in employment rates for men, particularly older men, (Pissarides *et al*., 2005) A similar study by Robin and Jacquemet (2010), in France, also found that married men participate more in the labour market than unmarried ones. The participation of men is however greater than that of both married and unmarried women.

Trends in labour force participation over time appear to favour women in a number of contexts. Looking at labour force participation patterns in New Zealand during 1986 to 1996, Dixon (1996) found that there was a pro-cyclical movement in the participation rates for both men and women. The participation rates fell during the 1986 to 1992 economic downturn and rose from 1993 to 1996 due to the economic recovery and the resumption of growth in employment. During the recovery process, there was a slow growth in the male labour force participation rate which was attributed to the reduction in unemployment which favoured females. The decline in unemployment favoured females as their employment and participation rates rose drastically.

The labour force participation by marital status showed that married and cohabiting men were more likely to be active participants in the labour force than divorced, separated or single men. For women, during 1988 to 1996 the greatest labour force involvement was observed for women who were married, cohabiting and those there were previously married. Never married women had the highest participation in 1987 but by 1996 their rate had become comparable to those of married women. These variations in participation patterns due to marital status were argued to be influenced by a number of other demographic characteristics that are correlated with marital status. For instance, men in their prime-aged years who have never married were on average less qualified in terms of education and experience when compared to men who were married, cohabiting or had previously been married (Dixon, 1996).

Literature for developing countries is less plentiful, but similar results have also been found when it comes to participation rates in the labour market. In South Arica between the years 1995 to 1999, there was an increase in labour force participation rates for both men and women. The increase in the male participation rate was lower than that of women because of the observed increase in female labour force participation. However, the overall participation

rate was still significantly higher for men than for women. What has increased was the female share in the labour force and economically active population (Casale and Posel, 2002).

When investigating the factors that determine the labour force participation of women in South Africa during the period of 1995 to 2004, Ntuli (2007) reported that marriage reduced the probability of South African women's participation in the labour market. Marriage was seen to be the biggest determinant of why African women had the lowest participation rates. Being divorced induced formerly married women to participate in the labour market.

Using the Nigerian Labour Market Survey of 2000 to examine how household structures influence participation in the labour market, Fadayomi and Ogunrinola (2005) found that married men had the highest participation rate of 91.7 percent. For females, the highest participation was for women who were heads of household, and this was higher than that of married and single women. Single women were found mostly to be young and still attending school or living with their parents.

Differing results were found in the case of Ghana. The marital status of a woman has a positive and significant effect on their likelihood of them participating in the labour force. The reason for this observation is that in Ghana, unlike many other countries, husbands assist their wives financially to that they can engage in a number of economic activities. The household budget is shared between the husband and wife, which gives the wife some form of financial responsibility to deal with household needs. About 40 percent of women who are married in urban locations take part in wholesale and retail activities and 20 percent are engaged in small size manufacturing, such as food processing. About 73 percent of married women in the Ghanaian rural areas are involved in agricultural and livestock activities (Sackey, 2005).

The following section will not turn to empirical research on trends in labour supply. In one of the earliest studies related to marital status in this field, Gronau (1979) found that in Israel married men on average worked longer hours in the labour market than unmarried men. In contrast, married women were found to spend more time in household work and less in the labour market compared to their unmarried counterparts. The results showed that marriage decreased women's labour supply in the market by an average of 1.5 hours per day while their household work increased by two hours a day. Married men were seen to increase their labour supply to the market by approximately two hours a day. Further, married individuals were seen to enjoy less leisure time than those who were not married and the difference was larger for men than for women. The two reasons put forward to explain these differences are the existence of children and marriage.

More recently, Mozzocco *et al* (2006) found that in the United States, when they used a model that would capture the behaviour of households looking at labour supply, savings and marital choice, the results were similar to those in Israel. Looking in particular at labour market supply by gender, they found that unmarried women supplied on average 200 more hours per annum as compared to married women, conditional on working. For unmarried men, their annual labour supply was almost 200 hours lower than married men.

One other observation was that, although there was an increase in women's labour supply, on average they work fewer hours than men, (Pissarides *et al*., 2005). When taking into account household dynamics, in the United Kingdom it was found that for households with children there was an alteration in the labour supply between men and women. When there are young children in the house, women are more likely to work part-time while men still work full-time, (Pissarides *et al*., 2005). The same was found in South Africa, where married women who had children under the age of 15 increased the hours they spent at home relative to women without young children.

2.4.2 Earnings

Most of the literature on marital status and earnings focuses on men, and results show that married men tend to earn significantly more than men who are not married. The literature on the effects of marriage on the wage premium of men dates back to the nineteenth century, and results show consistently that married men have an earning advantage (Ahituv and Lerman, 2007). Many studies used earnings equations to estimate these effects of marriage. Using cross-country data for the 1980s, Schoeni (1995) showed that in the 14 Organisation for Economic Co-operation and Development (OECD) countries married men had a wage advantage. Similar results were also found by Loh (1996) using the decennial census data of 1940-1980 for the United States, showing not only that a marriage wage premium existed, but that it increased from 11 percent in 1959 to 23 percent in 1969. In the early 1990s in the United States, the earning differential between married and unmarried men was estimated to be between 10 and 30 percent, depending on the methodology and sample used (Korenman and Neumark, 1990). Similar results were observed by Antonovics and Town (2004), that marriage induced a high wage premium. The wage differential due to marriage was found to range from 10 to 50 percent depending on the model specification. When taking into account the unobserved individual specific earning endowment, the difference was higher than when using cross sectional regressions. This wage premium was attributed to discrimination in favour of married men, productivity acquired due to marriage, and unobserved characteristics which make men more productive in the labour market while also making them attractive in the marriage market (Antonovics and Town, 2004).

The method by which this relationship between marital status and earnings is estimated differs between studies. A few studies trying to estimate the impact that marriage has on earnings used panel data so as to take into account the unobserved heterogeneity using random or fixed effects. One study that used this method was that of Korenman and Neumark (1991) who estimated the log of hourly earnings rates of young white males in the United States during the period of 1976 to 1980. The results without fixed effects found that for white men, marriage raised earnings by 11 percent, and with fixed effects it was 6 percent. Divorce was found to reduce earnings by 2 percent relative to married men. Further, when looking at the impact of marriage tenure on earnings, they found that the first 2 years of marriage raised earnings by 3 percent and the year after it grew by 1 percent (Korenman and Neumark, 1991).

Most studies use cross-section wage regression to estimate the effects that marital status has on earnings. The results are similar to those of panel data where random or fixed effects are applied: married men are found to earn significantly higher wages than those who have never been married. Further, the results reveal small or even negligible selection into employment which is related to estimates of cross sectional regressions. The difference that is observed between studies using cross sectional earnings regressions and those using panel data is on how much, if at all, selection bias contributes to the male marriage premium (Ginther and Zavodny, 2001).

Using the 1980 US Census, Ginther and Zavodny (2001), found that married men enjoy a 16 percent premium over unmarried men, and that selection bias did not play any role in the estimate of the earnings premium. Chun and Lee (2001) also found similar results when they used 1991 data to estimate why married men earn more. Married men earned on average 12.4 percent more than their unmarried counterparts. Studies in the United Kingdom show similar results to those found in previous US studies. Marriage has a positive and significant impact on earnings for men, resulting in an increase of between 9 and 18 percent (Bardasi and Taylor, 2008). These results were obtained from a simple OLS regression which ignored issues of endogeneity and selection bias. The difference was when it came to men who were cohabiting. They also enjoyed increased wages compared to single men, showing that men in some form of partnership either legal or not enjoy wage premiums. However, those who are married enjoyed the highest return. When controlling for selection bias and endogeneity, the results revealed a lower effect of marriage on wages for British men. The effect of marriage on earnings dropped from 2 to 4 percent (Bardasi and Taylor, 2008).

Evidence from South Africa, using cross sectional data from the South African Labour Force Survey of 2004, also shows supporting results. Men who cohabit earned significantly higher wages than those men that had never been married. For those that were divorced or widowed,

it was a slightly lower premium than men currently married (Casale and Posel, 2010). Married men on average earned 54 percent more than unmarried men when the authors did not control for any other characteristics. It was argued that one of the reason for this difference between the earnings of married and unmarried men was because of discrimination from employers in favour of married males. However, the results revealed that self-employed men who are married on average earn 29 percent more than unmarried men who have the same characteristics (Casale and Posel, 2010).

Casale and Posel (2010) also discussed the role played by bridal wealth which is a tradition practiced in South Africa, particularly by Africans to validate traditional marriages. This means that selection will be very important in explaining the earning premium associated with marriage and that it will likely account for a larger share of the marital earning premium in South Africa, compared to studies of other countries. They predicted that men with characteristics that are unobserved which are valued in the labour market are likely to be able to afford bridal wealth and hence get married. The bridal wealth payments may be a constraint to marriage, such that only high earning men would be the ones more likely to get married. They would be able to accumulate or borrow for the payment quicker than men with lower earning profiles.

Further, there is a significant difference in earnings that would be expected between married and those that are not married or cohabiting (Casale and Posel, 2010). This was supported by Loh (1996) and Stratton (2002) who found that as much as there was a wage premium for cohabiting men in the US, it was half that of married men. The reason could be that cohabiting relationships are not stable in most cases and lack of specialization because financial responsibilities of the household are shared more equally by the household (Casale and Posel, 2010). Budlender *et al.* (2004) also found that cohabitation patterns were most common among black South Africans, as it was seen as the best alternative for those who could not afford bridal wealth payments.

In contrast, the literature on the relationship between the earnings of women and marriage is much less developed than that of men. Early research in this area found very little or no relationship. Dolton and Makepeace (1987) argued that there were no significant differences in the earnings of married and unmarried women in the US and concluded that women's marital status is not an important factor in the determination of women's earnings. However, marital status is important in determining their participation decision. When adjustments were made on the status of the family, such as the number of children, the characteristics of a job and human capital, there was no relationship with participation (Hewitt *et al*, 2002).

Using the Panel Study of Income Dynamics of 1976, Hill (1979) found that there was no significant relationship between marriage and earnings. However, when she controlled for human capital characteristics and the number of children, white married women earned more than women who were not married. Interesting results were that women who were divorced, separated or widowed earned the most. Similar results were found by Budig and England (2001) using the 1982-1993 National Longitudinal Survey for Youth. When they controlled for job, human capital and family characteristics, the marriage premium for women was about4 percent. Also, they found that divorced, separated and widowed women earned more than those who were unmarried or married. Goldin and Polachek (1987), on the contrary found different results. They used the Census U.S data of 1980 and found that women who were single earned more than married women.

Studies in Europe also show evidence of the relationship between earnings and marital status. When analysing cross-sections that are repeated for women in Britain using the 1971 and 1975 General Household Surveys, the mean hourly wage differential was 45 percent in 1971 and 42 percent in 1975 in favour of single women. When the earning equations estimates are separated by marital status only 3 to 12 percent of these differentials were due to unexplained differences in the job and workers characteristics (Greenhalgh, 1980). Siebert and Sloane (1981) reported a 10 to 25 percent yearly wage differential favouring women who have never been married. When controlling for the attributes of the worker, the differential declined substantially. Moreover, when the presence of children under 12 was accounted for, the authors did not find it to have any relation to the earnings of married women that worked.

Moore and Wilson (1982) looked at the relationship between earnings and having children, for women who are married, working full-time and between the ages of 35 to 49 using the NLS Women Data of 1972. When controlling for other characteristics of a worker, women who had three or more children and were married had 11 percent lower earnings per hour than other married women who did not have children. For those with fewer children, there was no significant difference in wages among women.

Lastly, Waldfogel (1997) extends the examination of the relationship between marital status and women to look at the effect of motherhood on earnings, using US data from 1968 to1988. First, the study established that married and divorced women experienced gains in earnings as compared to single women. However, the study goes on to show that women with children earn less than those without children. The existence of children reduces the earnings of women, as they usually take time off the labour market (Waldfogel, 1997). This could suggest that although marriage increases women's earnings, similarly to men's, this effect is counter-balanced by the negative effect of child bearing (Hewitt *et al*, 2002).

2.5 Conclusion

This chapter, reviewed a wide range of both theoretical and empirical literature on the impact of marital status on labour market outcomes, particularly labour force participation and earnings. Much of the literature treats labour force participation as synonymous with employment, as when someone participates in the market as opposed to home production it is assumed that they are employed. However, due to high rates of unemployment in Lesotho, this study will consider labour force participation and employment sequentially, and examine the effects of marital status on both outcomes.

The neoclassical theory of labour supply reviewed here explains how individuals decide between participating in the labour market and consuming leisure, and why when examining women, the theory is extended to include time spent in home production. Moreover, the decision regarding labour force participation can be made in a family context, as a joint decision by members of the household, in which one partner may specialise in market work and the other in home production. On average, the empirical literature shows that married men supplied more hours in the labour market than unmarried men. With women, single women were the ones who in most cases had the highest supply of labour in the labour market.

The literature on marital status and its relationship to earnings argues that a combination of increased productivity, specialisation and discrimination contribute to the widely-observed differentials in earnings among married and single men. With women, however, the theoretical direction of the effect of marital status on earnings is more difficult to predict. In addition, any positive effect of marriage on earnings similar to that of men may be offset by childbearing and rearing. In general, although empirical results are somewhat mixed, marriage is found to reduce earnings for women.

In summary, across a wide range of studies, marital status was found to have a significant effect on labour market outcomes for both men and women. However, there is currently no existing evidence on the relationship between marital status and economic outcomes in Lesotho. Therefore, the goal of the next two chapters is to fill this gap in the literature.

Chapter three: Data Description, Sample Construction and Descriptive Statistics

The previous chapter discussed the theory of how the economic behaviour of men and women might differ according to their marital status, based on the pioneering work of Gary Becker (1973). This issue was deemed important as it has implications on the growth of a population, income inequality, one's capabilities, labour force participation, time allocation between work and household activities just to mention a few (Becker, 1973).

A wide variety of empirical research, particularly in developed countries, has sought to measure the effects of marriage on labour market outcomes, such as labour force participation and earnings. They suggest that married women are less likely to participate in the labour force than unmarried women, while married men earn higher wages than their unmarried counterparts (Ahituv and Lerman, 2007; Schoeni, 1995). In more recent years, a limited literature in this field has begun to grow in developing countries (Sackey, 2005; Ntuli, 2007; Casale and Posel, 2010). The current study aims to contribute to this literature, specifically in the case of Lesotho, a country for which such studies presently do not exist.

This chapter will describe the extent to which the observations found in previous studies are also evident in Lesotho. Further, due to the lack of academic research that model activities of the labour market of Lesotho, the current study will base its analysis approach on other studies done mainly in the Southern African region, South Africa to be precise.

This chapter consists of four parts. In the first section, the Integrated Labour Force Survey dataset used throughout the study is described. This section will also elaborate on why this dataset was chosen and its drawbacks. Section 3.2 elaborates on the sample construction, and defines key variables used in the analysis. Descriptive statistics of the labour market status samples, by gender and marital status are presented in Section 3.3, and Section 3.4 concludes.

3.1 Data description

This study will use cross sectional data from the May 2008 Integrated Labour Force Survey (ILFS) which was collected by the Bureau of Statistics Lesotho. The survey gathered information on the composition, size and characteristics of the labour force in Lesotho, using interviews with 12 000 households. Through this survey the Bureau of Statistics Lesotho analysed the employment and labour situation in Lesotho at the time of the survey. The main focus of the survey was on the size and spatial distribution of the labour force, and analysing market related characteristics. The survey was also aimed at helping government to assess the participation of different groups of the population, specifically women and youth, into the labour force (Bureau of Statistics, 2008).

The survey also collected information that would help in the analysis of the employability of individuals in Lesotho. Further, it aimed to provide an insight to policy makers and government on the type of job that should be created so as to reduce unemployment and underemployment. Its final goal was to help in understanding the informal sector and the type of job that are offered in that sector, while making it easier to determine its role to the economy (Bureau of Statistics, 2008).

As compared to all the data available in Lesotho from government and non-governmental departments, the ILFS is the best choice because it is the only survey of its kind that collects information at household and individual level looking at labour force activities in Lesotho. Further, ILFS is the only analytical report which consists of data on population in the labour force, economic activity, population employed, earnings, employment and occupational characteristics, employment in secondary activities, unemployment, under employment, informal sector, migration, child labour, youth, non-market activities and household characteristics and amenities (Bureau of Statistics, 2008). It collects extensive information for those that are economically active and inactive, employed and unemployed. It further deals with all employment sectors in the country, the formal and informal sectors (Bureau of Statistics, 2008). While previous surveys of the labour force have been conducted in Lesotho, the ILFS 2008 is the most recently collected dataset.

The survey contains comprehensive coverage of labour force information. There is information on marital status, the current employment status and earnings, amongst other individual-level and household-level variables. One main advantage of the survey is that it also collects information about employment in home production and the number of hours spent in housework. It is through this range of information that the study will examine the role that marital status plays regarding labour force participation, employment and earnings. Thus far, the ILFS is the best source of data that is available that can be used to carry out this study. Furthermore, academic research using the 2008 ILFS has not previously been published (Bureau of Statistics, 2008). The sample of this survey was designed using a two-staged stratified sample methodology. The stratifying was done using the agro-ecological zones, namely lowland, foothill, and mountain and Senqu river valley. The other stratifying variables that were used were rural and urban areas. The two stages involved in selecting the sampling units involved the primary sampling unit which involved the selection of enumeration areas. The second stage was the selection of sampling units which are households selected systematically within the enumeration areas (Bureau of Statistics, 2008).

3.2 Construction of Sample and Key Variables

The dataset contains weights that can be used to make the sample estimates representative of the population. However, the later analysis in this dissertation involves estimating two levels of sample selection, followed by an interval regression model, the estimation of which becomes complex when attempting to use weights. Therefore for consistency with the later regression estimation, all analysis is presented at the level of the sample.

For the purpose of the study, individuals who will potentially form part of the labour force are those between the ages of 15 to 65 who are not in full time education. Those who report themselves as working full time, part-time, those on sick-leave when the survey was conducted, and those that are self-employed are classified as the employed sample, provided that they report a positive earning. This means that subsistence farmers are not counted as employed unless they also perform some wage-earning work. Additionally, those who report themselves as unemployed but looking for work will be captured as unemployed. The final group will be those that are economically inactive as they are not interested in employment such as pensioners or are not actively searching for work. For the purpose of the study the narrow definition of unemployment will be used, because even the 2008 ILFS defined unemployment as the population that concurrently did not have jobs, but were available for work and seeking for working during a week preceding the survey (Bureau of Statistics, 2008).

To examine the effects of marital status on participation, employment and earnings by using both descriptive and regression analysis, the key variable will be marital status. The question on marital status in the ILFS 2008 had seven options from which respondents can choose, namely: never been married, monogamously married, polygamously married, living together, separated, divorced and widowed.

The table 3.1 below gives the percentage of people that are in the labour force that belong to each marital status category by gender. This is a broader range of categories than used in labour force surveys in many other countries. For example, South Africa's Quarterly Labour Force Survey allows only for one category of marriage, and does not distinguish between those who are separated and those who are divorced (Statistics South Africa, 2013). Another objective of this study is to examine the labour market differences by marital status and by gender. Therefore, t-test were conducted on the descriptive statistics results throughout the chapter. The results for men are base categories and they will be compared to those of women to see if the estimates are significantly different from each other.

Table 3.1: The sample distribution according to marital status, by gender and labour market status (%)

Marital Status	Economically inactive		Unemployed-Searching		Employed	
	Men	Women	Men	Women	Men	Women
Never married	44.43	17.66***	47.58	30.95***	31.49	28.34***
Monogamously married	45.49	59.65***	45.52	48.74*	60.69	43.27***
Polygamously married	0.61	0.78	0.66	0.48	0.87	0.59
Cohabiting	0.19	0.15	0.33	0.27	0.19	0.34
Separated	3.69	2.84**	2.85	4.02*	2.71	6.42***
Divorced	0.57	0.76	0.27	2.11***	0.58	1.69***
Widowed	5.02	18.16***	2.79	13.43***	3.47	19.35***
Totals	100	100	100	100	100	100
Number of observations	4720	6580	1507	1467	5389	3846

Source: ILFS (2008).
Notes: The samples include all males and females aged 15-65 years. ***, **, and * indicate that the estimates for women differs from that for men at 0.01, 0.05 and 0.1 significance levels respectively.

Looking at table 3.1 above, the overall distribution of the sample is mainly dominated by those never married and in monogamous marriages regardless of their labour market status. The largest representation for men are 60.69 percent of employed men who are monogamously married. This is followed by 59.65 percent of economically inactive women who are monogamously married. Amongst the economically inactive, women are much less likely than men, 17.66 percent compared to 44.43 percent, to be never married, and are much more likely than men to be monogamously married. Similar patterns exist amongst the unemployed, although the gender differences are smaller. In contrast, amongst the employed, a greater percentage of men than women, 60.69 percent compared to 43.27 percent, are monogamously married. Thus women's employment is strongly negatively associated with monogamous marriage. In addition, although the categories are very small, a significantly larger percentage of economically active women than men are separated or divorced, suggesting that separation from a partner may drive women into the labour market. Across all categories, women are much more likely than men to be widowed, which suggests that even in the 18 to 65 age group, husbands tend to die before their wives. The table shows that the sample size for other marital statues namely cohabiting, divorced and polygamous marriages are small and below 1 percent for the different labour market classifications. This substantial differences in the distribution of marital status by gender and labour market status provides part of the motivation for this study. However, the survey contains only this one question which relates to marital status, namely the person's current marital status. Further information is not collected. For instance, the duration of one's current marital status may affect participation, employment or earnings, but such information is not available.

Following on the literature review conducted in Chapter 2, other variables which will be included in the analysis of the effect of marital status on labour force participation, employment

and earnings will include household characteristics. The household characteristics will include the number of children in the household, the number of the elderly in the household, the presence of a spouse in household and other employed household members, and other household income from employment. Other household income is constructed as the sum of the earnings of other household members, using the midpoints of the reported earnings categories as broad income proxies. The survey did not collect information on the value of other income sources, such as pensions and remittances. This variable will therefore be treated with caution. Other inclusions will be the typical labour market covariates such as age, location, education, occupation and hours worked.

3.3 Descriptive Statistics

This section presents descriptive statistics of the variables that will be estimated in the study.

Tables 3.2 - 3.5 present the results of a segmented labour market analysis looking at different covariates such as years of schooling, age, location, number of children under the age of seven and those between eight to fourteen, number of adults in the household over seventy, the presence of other employed household member, other household income from employment, and involvement in household work (a dummy variable indicating whether or not the individual performs household chores).

The data were segmented in this manner so that comparisons of the different groups in the labour force (the economically inactive, unemployed and employed) can be made. The sample is further divided by gender and marital status (never married, monogamously married, polygamously married, cohabiting, separated, divorced and widowed).

Table 3.2 below presents descriptive statistics for the covariates mentioned above for the economically inactive population. When looking at those economically inactive across all the different marital statuses, the age covariates reveal that the youngest group is represented by never married men and women aged on average 23.56 and 23.79 years respectively. The oldest groups are represented by men in polygamous marriages, men and women who are widowed. These marital groups are on average between the ages of 50.45 to 50.73.

Table 3.2: Mean of covariates for economically inactive men and women by marital status

	Never married men	Never married women	Mon-married men	Mon-married women	Pol-married men	Pol-married women	Cohabiting men	Cohabiting women	Separated men	Separated women	Divorced men	Divorced women	Widows men	Widows women
Age	23.56 (0.17)	23.79 (0.27)	41.81 (0.30)	35.83*** (0.21)	50.57 (2.04)	36.02*** (1.68)	38.44 (2.14)	43.50 (4.16)	42.58 (0.88)	36..39*** (0.86)	45.74 (2.12)	40.94* (1.90)	50.45 (0.69)	50.73 (0.31)
No formal education	0.16 (0.01)	0.05*** (0.01)	0.30 (0.01)	0.04*** (0.00)	0.57 (0.10)	0.04 (0.03)	0.11 (0.11)	0.30 (0.15)	0.35 (0.04)	0.04*** (0.02)	0.41 (0.10)	0.06*** (0.03)	0.41 (0.03)	0.09*** (0.01)
Primary education	0.63 (0.01)	0.56*** (0.02)	0.57 (0.01)	0.68*** (0.01)	0.36 (0.09)	0.66*** (0.07)	0.89 (0.11)	0.60 (0.16)	0.51 (0.04)	0.72*** (0.03)	0.44 (0.10)	0.8*** (0.06)	0.51 (0.03)	0.79*** (0.01)
Secondary education	0.20 (0.01)	0.38*** (0.02)	0.12 (0.01)	0.28*** (0.01)	0.04 (0.04)	0.30*** (0.07)	0.00 (.)	0.10 (0.10)	0.15 (0.03)	0.23** (0.03)	0.11 (0.06)	0.14 (0.05)	0.08 (0.02)	0.12* (0.01)
Tertiary education	0.01 (0.00)	0.01 (0.00)	0.01 (0.00)	0.01 (0.00)	0.04 (0.04)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.01 (0.01)	0.04 (0.04)	0.00 (.)	0.00 (.)	0.00 (0.00)
Urban area	0.09 (0.01)	0.16*** (0.01)	0.09 (0.01)	0.12*** (0.01)	0.11 (0.06)	0.14 (0.05)	0.22 (0.15)	0.30 (0.15)	0.06 (0.02)	0.11* (0.02)	0.04 (0.04)	0.12 (0.05)	0.07 (0.02)	0.12** (0.01)
No. children under 7	0.67 (0.02)	0.94*** (0.03)	1.02 (0.02)	1.06 (0.02)	0.93 (0.21)	1.10 (0.12)	0.56 (0.34)	0.50 (0.31)	0.28 (0.05)	1.11*** (0.08)	0.15 (0.07)	1.12*** (0.15)	0.49 (0.05)	0.77*** (0.03)
No. children 8-14	0.97 (0.02)	0.98 (0.03)	0.92 (0.02)	0.94 (0.02)	0.86 (0.20)	1.12 (0.15)	0.33 (0.24)	0.20 (0.20)	0.42 (0.06)	1.02*** (0.08)	0.56 (0.22)	1.12*** (0.14)	0.60 (0.06)	0.94*** (0.03)
No. of employed adults	0.68 (0.02)	0.75** (0.03)	0.53 (0.02)	0.80*** (0.02)	0.71 (0.28)	1.10 (0.18)	0.11 (0.11)	0.40 (0.16)	0.35 (0.05)	0.64 (0.07)	0.11 (0.08)	0.08*** (0.12)	0.37 (0.05)	0.50** (0.02)
No. of adults above 65	0.32 (0.01)	0.28 (0.02)	0.09 (0.01)	0.10*** (0.01)	0.07 (0.05)	0.18** (0.05)	0.11 (0.11)	0.10 (0.10)	0.17 (0.03)	0.22 (0.04)	0.19 (0.08)	0.26 (0.06)	0.16 (0.03)	0.0*** (0.01)
Other household income	1015.45 (68.70)	1077.29 (85.81)	615.28 (46.02)	1427.24*** (52.74)	644.64 (298.19)	2454.00** (729.80)	44.44 (44.44)	515.00 (345.53)	359.65 (127.62)	1193.17** (376.57)	200.00 (152.75)	927.00** (285.19)	309.07 (48.15)	559.63*** (69.01)
Household production	0.51 (0.01)	0.79*** (0.01)	0.47 (0.01)	0.89*** (0.01)	0.39 (0.09)	0.88*** (0.05)	0.56 (0.18)	1.00** (.)	0.65 (0.04)	0.82*** (0.03)	0.70 (0.09)	0.78 (0.06)	0.66 (0.03)	0.84*** (0.01)
No. of observations	2046	1127	2094	3835	28	50	9	10	171	183	27	50	237	1168

Source: ILFS (2008).

Notes: Standard errors are in parentheses. ***, **, and * indicate that the estimates for women differs from that for men at 0.01, 0.05 and 0.1 significance levels respectively.

The education covariates indicate the proportion of individuals in each education category, and show that on average, most people who are economically inactive have primary education. This finding is observed for both men and women in the different marital status. For instance, 89 percent of economically inactive men who are cohabiting have primary education and 79 percent for widowed women. With the except of primary education estimates for cohabiting women which shows an insignificant gender difference, the other marital categories estimates indicate a 0.01 significance level in gender difference. The covariate for secondary education shows that on average there are more women who are economically inactive with secondary education than there are men, for all the marital status categories. Further, the sample also shows that on average there are very few people with tertiary education that are economically inactive, suggesting that tertiary education induces individuals to either search for or find work because the labour market favours those who are educated in terms of opportunities available and earnings. This is supported by t-test results which reveal that the estimates for tertiary education in all the marital categories are not significant in explaining gender difference. One surprising finding is that very few individuals in the sample of those economically inactive have no formal education, with two exceptions: men who are polygamously married or widowed. These sub-samples are also on average relatively old, suggesting a possible lack of access to formal education in the past. A possibility is that, back in the day in Lesotho, the practice of boys herding animals was a common practice which might have hindered school attendance.

Turning to the geographical distribution of the economically inactive, when comparing men and women across the different marital statuses there are on average slightly more women living in urban areas that are economically inactive than men, though the margin is minimal. Overall there are very few men and women living in urban areas who are economically inactive.

The next set of variables examine the household composition of the sample of the economically inactive. Cohabiting, separated, divorced and widowed men on average have a lower number of children under the ages of seven living in the household than the married categories. For cohabiting couples one would expect this because they may not have children if there is not much commitment in the formation of such families. In the case of widowed men, often after a man loses his wife, his mother of other female family members share the responsibility of taking care of the children. In the case of women, they are responsible for taking care of the children hence the observed large presence of children below seven. Similarly, there is a much larger number of children in households where a woman is separated or divorced than for men. Monogamously and polygamously married men and women have on average the largest presence of children under the age of seven. Never

married individuals also live with a large number of young children. However, since these individuals are on average the youngest group, such children may be their siblings or other family members, rather than their own biological children. When looking at the presence of children in the school going years of eight to fourteen for the economically inactive, we see similar trends to the presence of children under the age of seven.

Table 3.2 also shows that majority of economically inactive men and women in the various marital classifications have other employed members in their households which might induce them to not seek for employment. Unsurprisingly, the largest is amongst the polygamously married at 1.1 for women and 0.71 for men, where the household is likely to be comprised of a large number of adults. The other large presence of employed adults is observed for monogamously married women where they have 0.8 employed adults in their households. These findings are supported by those of other household income. Polygamously and monogamously married women have the highest other income in their household of R2454.00 and R1427.24 respectively. This is not surprising, as they also have the largest number of employed individuals living in their households. Furthermore, the economically inactive do not have much presence members in their households of adults above the age of 65 for both men and women in all marital categories.

Finally, the covariate of involvement in household production for the economically inactive shows that on average more women than men are engaged in household work. Such work includes fetching water or firewood, cooking food for home consumption, and caring for children the sick or the elderly. This finding is thus to be expected, since theory and empirical studies show that women more than men are engaged in household production. Fewer married men are engaged in household production when compared to men in other marital categories.

The discussion now turns to descriptive statistics for those who are unemployed. Table 3.3 represents the mean of the covariates for those who are unemployed. The covariates include household and individual characteristics that could possible influence one’s decision to search for employment. Similar to the previous table, both men and women who have never been married are the youngest, at an average age of 24.27 to 24.37 for unemployed individuals. The oldest group are polygamously married men who are on average 50.22 years old.

Table 3.3: Mean of covariates for unemployed men and women by marital status

	Never married men	Never married women	Mon-married men	Mon-married women	Pol-married men	Pol-married women	Cohabiting men	Cohabiting women	Separated men	Separated women	Divorced men	Divorced women	Widowed men	Widowed women
Age	24.27 (0.21)	24.37 (0.31)	35.52 (0.44)	31.65*** (0.39)	50.22 (3.01)	36.86** (5.04)	45.80 (5.31)	45.75 (6.05)	36.52 (1.46)	32.27** (1.33)	40.50 (6.69)	35.90 (1.68)	45.73 (1.68)	44.89 (0.76)
No Form Edu	0.09 (0.01)	0.01*** (0.01)	0.16 (0.01)	0.02*** (0.00)	0.44 (0.18)	0.00** (.)	0.60 (0.24)	0.25 (0.25)	0.13 (0.05)	0.05 (0.03)	0.25 (0.25)	0.00 (.)	0.25 (0.07)	0.05*** (0.02)
Primary education	0.58 (0.02)	0.42*** (0.02)	0.57 (0.02)	0.60 (0.02)	0.44 (0.18)	0.57 (0.20)	0.20 (0.20)	0.50 (0.29)	0.70 (0.07)	0.63 (0.07)	0.50 (0.29)	0.77 (0.08)	0.60 (0.08)	0.74 (0.03)
Secondary education	0.32 (0.02)	0.53*** (0.02)	0.26 (0.02)	0.37*** (0.02)	0.00 (.)	0.43* (0.20)	0.20 (0.20)	0.25 (0.25)	0.15 (0.06)	0.30* (0.06)	0.25 (0.25)	0.23 (0.08)	0.13 (0.05)	0.21 (0.03)
Tertiary education	0.01 (0.00)	0.04*** (0.01)	0.01 (0.00)	0.02 (0.00)	0.11 (0.11)	0.00 (.)	0.00 (.)	0.00 (.)	0.03 (0.03)	0.02 (0.02)	0.00 (.)	0.00 (.)	0.03 (0.03)	0.01 (0.01)
Urban area	0.22 (0.02)	0.31*** (0.02)	0.26 (0.02)	0.30* (0.02)	0.11 (0.11)	0.29 (0.18)	0.60 (0.24)	0.75 (0.25)	0.17 (0.06)	0.27 (0.06)	0.00 (.)	0.23*** (0.08)	0.23 (0.07)	0.23 (0.03)
No. of children under 7	0.56 (0.03)	0.86*** (0.05)	0.98 (0.04)	0.98 (0.04)	0.89 (0.26)	1.14 (0.26)	0.20 (0.20)	0.25 (0.25)	0.33 (0.09)	0.96*** (0.15)	0.50 (0.29)	0.90 (0.15)	0.38 (0.12)	0.61* (0.06)
No. of children 8-14	0.81 (0.03)	0.72* (0.04)	0.75 (0.03)	0.82 (0.03)	0.78 (0.36)	0.86 (0.34)	0.20 (0.20)	0.00 (.)	0.55 (0.12)	0.80 (0.12)	0.00 (.)	1.17*** (0.25)	0.60 (0.12)	0.87* (0.07)
No. employed adults	0.65 (0.03)	0.80** (0.05)	0.53 (0.03)	0.77*** (0.03)	0.33 (0.24)	0.43 (0.30)	0.60 (0.24)	0.25 (0.25)	0.50 (0.11)	0.68 (0.14)	0.25 (0.25)	0.63*** (0.18)	0.40 (0.13)	0.36 (0.05)
No. adults above 65	0.13 (0.01)	0.14 (0.02)	0.07 (0.01)	0.07 (0.01)	0.11 (0.11)	0.29 (0.18)	0.20 (0.20)	0.00 (.)	0.25 (0.08)	0.23 (0.08)	0.00 (.)	0.17** (0.07)	0.10 (0.05)	0.04** (0.01)
Other household income	827.79 (77.07)	1534.29*** (182.56)	648.72 (77.31)	1276.01*** (104.24)	83.33 (83.33)	842.86 (501.48)	480.00 (290.09)	562.50 (359.04)	495.00 (173.06)	720.54 (357.03)	37.50 (37.50)	540.00 (195.84)	341.25 (130.06)	267.18 (57.73)
Household production	0.47 (0.02)	0.70*** (0.02)	0.41 (0.02)	0.87*** (0.01)	0.56 (0.18)	0.71 (0.18)	0.60 (0.24)	0.75 (0.25)	0.53 (0.08)	0.82*** (0.05)	0.75 (0.25)	0.60 (0.09)	0.67 (0.08)	0.86*** (0.02)
No. of obs	689	436	662	694	9	7	5	4	40	56	4	30	40	195

Source: ILFS (2008).

Notes: Standard errors are in parentheses. ***, **, and * indicate that the estimates for women differs from that for men at 0.01, 0.05 and 0.1 significance levels respectively.

The education covariates reveal that when women are compared to men, there are fewer women with no education that are searching for work. For example, 60 percent of cohabiting men who are unemployed are without education, compared to 25 percent of women in the same marital category. Turning to those with primary and secondary education, there are on average more people who have primary education than with secondary education amongst those who are unemployed. The table shows that, across all marital status categories, unemployed women are more likely than unemployed men to have either primary or secondary education. This suggests that the factors that determine labour market access may differ substantially by gender. There are very few people in the sample that are unemployed when they have a tertiary education.

The geographical distribution shows that on average there are fewer men and women who are unemployed that live in urban areas, although substantially more than was the case for the economically inactive. The exception is with cohabiting, where 60 and 75 percent of men and women respectively who are unemployed live in urban areas.

On average women have more children under the age of 7 living in the household than men across all the marital categories. For instance, 96 percent of separated women have children under the age of 7 as compared to only 33 percent of men. The presence of children in the school-going age for the unemployed sample shows similar patterns to the presence of children less than 7 years. However, the gender difference in the presence of children in the school going years is smaller than that for younger children.

Table 3.3 further shows variation in the average number of other employed members in the household. Never married and monogamously married women have the highest presence of working adults in their household at 0.80 and 0.77 respectively. This is seen when looking at other household income, where still never married and monogamously married women have the highest other income when compared to men and women in other marital categories. When comparing men and women, results (see asterisks in table 3.3) show that the gender difference are mainly not significant. The only estimates of women that differ from that of men are those in monogamous marriages and never married at 0.01 significance level. The unemployed and searching men and women reported that not many of them had adults above the age of 65 in their household. On average more women than men are engaged in household work across most of the marital status categories. A much smaller proportion of both gender perform household work than was the case for the economically inactive, perhaps due to the trade-off between home production and job search activities.

The following section will discuss the description of results for employed men and women. Table 3.4 presents the results for the sub-sample of employed men and women. This table is also segmented on the basis of household and individual covariates.

Table 3.4: Mean of covariates for employed men and women by marital status

	Never married men	Never married women	Mon-married men	Mon-married women	Pol-married men	Pol-married women	Cohabiting men	Cohabiting women	Separated men	Separated women	Divorced men	Divorced women	Widows men	Widows women
Age	24.18	26.94***	38.43	35.78***	47.22	38.76***	44.22	42.92	37.41	37.95	40.07	39.31	46.30	45.32
	(0.17)	(0.26)	(0.18)	(0.26)	(1.57)	(2.60)	(3.25)	(3.17)	(0.87)	(0.68)	(1.96)	(1.24)	(0.76)	(0.38)
No Formal Education	0.14	0.02***	0.14	0.01***	0.28	0.05**	0.44	0.00**	0.21	0.01***	0.10	0.02	0.21	0.04***
	(0.01)	(0.00)	(0.01)	(0.00)	(0.08)	(0.05)	(0.18)	(.)	(0.03)	(0.01)	(0.06)	(0.02)	(0.03)	(0.01)
Primary Education	0.57	0.41***	0.50	0.46***	0.61	0.57	0.33	0.58	0.47	0.46	0.45	0.44	0.55	0.60
	(0.01)	(0.02)	(0.01)	(0.01)	(0.08)	(0.11)	(0.17)	(0.15)	(0.04)	(0.03)	(0.09)	(0.06)	(0.04)	(0.02)
Secondary Education	0.25	0.48***	0.29	0.41***	0.08	0.29*	0.22	0.42	0.29	0.46***	0.28	0.40	0.21	0.29**
	(0.01)	(0.02)	(0.01)	(0.01)	(0.05)	(0.10)	(0.15)	(0.15)	(0.04)	(0.03)	(0.08)	(0.06)	(0.03)	(0.02)
Tertiary Education	0.04	0.09***	0.07	0.12***	0.03	0.10*	0.00	0.00	0.04	0.07	0.17	0.15	0.03	0.07***
	(0.00)	(0.01)	(0.00)	(0.01)	(0.03)	(0.07)	(.)	(.)	(0.02)	(0.02)	(0.07)	(0.05)	(0.01)	(0.01)
Urban Area	0.24	0.47***	0.34	0.49***	0.31	0.57*	0.78	1.00	0.29	0.35***	0.45	0.56	0.30	0.39**
	(0.01)	(0.02)	(0.01)	(0.01)	(0.08)	(0.11)	(0.15)	(.)	(0.04)	(0.03)	(0.09)	(0.06)	(0.03)	(0.02)
No. children under 7	0.54	0.63***	0.88	0.72***	0.97	0.76	0.22	0.25	0.32	0.68***	0.28	0.61**	0.52	0.61
	(0.02)	(0.03)	(0.02)	(0.02)	(0.12)	(0.18)	(0.15)	(0.13)	(0.06)	(0.06)	(0.10)	(0.11)	(0.07)	(0.03)
No. children 8-14	0.79	0.68***	0.82	0.73***	1.06	0.90	0.00	0.17	0.48	0.90***	0.59	0.89	0.70	0.82*
	(0.02)	(0.03)	(0.02)	(0.02)	(0.18)	(0.19)	(.)	(0.11)	(0.06)	(0.06)	(0.14)	(0.12)	(0.06)	(0.03)
No. employed adults	1.13	0.92***	0.69	1.01***	0.89	1.57*	0.70	0.58	0.71	0.67	0.86	0.63	0.47	0.52
	(0.03)	(0.04)	(0.02)	(0.03)	(0.20)	(0.32)	(0.15)	(0.15)	(0.10)	(0.07)	(0.20)	(0.13)	(0.06)	(0.03)
No. adults above 65	0.18	0.14***	0.07	0.08**	0.06	0.10	0.00	0.08	0.13	0.11	0.17	0.13	0.13	0.06**
	(0.01)	(0.01)	(0.00)	(0.01)	(0.04)	(0.07)	(.)	(0.08)	(0.03)	(0.02)	(0.09)	(0.04)	(0.03)	(0.01)
Other household Income	2301.09	2659.92**	3396.84	3772.48*	3580.56	2930.95	1116.67	791.67	2168.35	1641.00	2124.14	1646.77	2636.52	1871.74
	(96.74)	(132.89)	(98.37)	(98.37)	(997.27)	(716.74)	(354.04)	(167.86)	(317.78)	(143.57)	(410.88)	(307.07)	(445.75)	(154.87)
Household production	0.34	0.56***	0.26	0.71***	0.42	0.71**	0.22	0.92***	0.46	0.61***	0.52	0.56	0.39	0.62***
	(0.01)	(0.02)	(0.01)	(0.01)	(0.08)	(0.10)	(0.15)	(0.08)	(0.04)	(0.03)	(0.09)	(0.06)	(0.04)	(0.02)
No. observations	1612	1013	3114	1606	36	21	9	12	139	239	29	62	178	713

Source: ILFS (2008).

Notes: Standard errors are in parentheses. ***, **, and * indicate that the estimates for women differs from that for men at 0.01, 0.05 and 0.1 significance levels respectively.

The age covariates reveal that on average the youngest group is still men and women who are never married just as the results in table 3.2 and 3.3 indicated. The oldest employed marital group are those in polygamous marriages averaging 47.22 years. Education is among determinants that make individuals favourable to employers than those without education. Therefore, the observed results where few employed people are without education was expected. Even though results show that few employed individuals have no formal education, it is interesting that there is a difference in magnitude between men and women. Across all marital status 0-5 percent of women have no formal education compared to men who average 14-44 percent. Men across the different marital categories who are employed are typically more likely to have primary education than secondary and tertiary education. Similar results are observed for women, though the difference between these two categories is typically smaller than for men. The results surprisingly show that women who are employed are more likely to have more education than men. This is observed across all marital categories. This may suggest that there exist discrimination in Lesotho's labour market against women, in that for women to be employable, they need to have more education than men. It may also indicate that women are more likely than men to be employed in occupations such as teaching and nursing, which require advanced qualifications.

Overall, the location distribution show that there are more women than men employed that are living in urban areas. For example, 49 percent of monogamously married compared to 34 percent of men live in urban areas, and this relationship is observed for all the marital classifications. Again one explanation for this maybe be that of the majority of women in Lesotho being employed in the textile and garment sectors, where majority of the factories are found in large urban towns.

Not surprisingly, employed married men and women have more children under 7 years in their households than other marital status categories. The gender differences in the number of young children are smaller than for the other labour market statuses, and in some cases favour men, suggesting that the presence of young children is a constraint on women's employment. Employed men and women in the seven different marital statuses all have the presence of children between schools going years of 8 to 14 in their households. The t-test results for the two coefficients indicate that gender differences are significant at 0.01 level for never married, monogamously married and separated women.

Table 3.4 further shows that most households by gender and marital status of the employed reported to have other employed adults in their households (the variable here indicates employed adults in addition to the individual in question). On average employed men and

women across all the marital statuses reported having very few adults over the age of 65 in their households.

On average more employed women than men are involved in household production, which is in line with what theory predicts. Most women perform household tasks such as fetching water or firewood, or caring for others, despite being employed, but only a minority of employed men are engaged in such tasks. 56 percent of women who have never married are engaged in household work, compared to 71 percent of monogamously married women.

Monogamously married women on average reported more other household income (at R3 772.48, excluding their own earnings) than other marital status groups. This is an interesting finding which supports findings from chapter two. It confirms that indeed the labour market favours married men because chances are the high income observed for married women is due to their husbands earnings. The other household income estimates for monogamously married women differ from that for men at 0.1 significance level. Cohabiting individuals reported the lowest other income in their household from employment for both men and women and the gender difference is not significant for this marital category.

Another expected finding in line with what theory predicted in chapter 2 is high women's involvement in household production than men. However, one would have expected to see lower figures because when they are employed it means they now spend more time at work than at home. This might also suggest that women are working in less demanding and low paying jobs which allow their engagement in household work.

Table 3.5 below, shows occupational and productivity characteristics for the employed sample in the study, which are expected to be some of the characteristics that determine earnings. Before presenting the results, it should be noted that some people may have not indicated their occupations. The question around occupation might also be a sensitive question as it can somewhat give an indication of the earnings of the individual in question.

Never married males and females on average supplied more hours per week 953.68 and 53.66 respectively) than individuals in other marital status categories. It is surprising that employed females in polygamous marriages work on average similar hours (52.48) to never married women. This could mean that, when some women in polygamous marriages work, other wives take care of the household, which gives allowance for those who are employed to work more hours. However, these estimates must be treated with caution as they are derived from a small sample. With regards to males, married men work fewer hours than never married and separated men. It was expected that married men would be working on average longer hours in the labour market, as theory argued that when the wives specialise in home

production, their partners will be engaged more in the labour market (Waldfogel, 1997; Bardasi and Taylor, 2008).

Table 3.5: Mean of covariates of occupational characteristics for employed men and women, by marital status

	Never married men	Never married women	Mon-married men	Mon-married women	Pol-married men	Pol-married women	Cohabiting men	Cohabiting women	Separated men	Separated women	Divorced men	Divorced women	Widows men	Widows women
Hours Worked	53.69 (0.40)	53.66 (0.57)	50.58 (0.30)	46.68*** (0.45)	47.97 (2.28)	52.48 (3.97)	54.00 (8.42)	44.38 (5.04)	50.01 (1.66)	47.77 (1.20)	48.28 (3.91)	51.25 (2.94)	48.72 (1.31)	46.82 (0.76)
Officials	0.01 (0.00)	0.01 (0.00)	0.03 (0.00)	0.03 (0.00)	0.05 (0.04)	0.00 (.)	0.00 (.)	0.00 (.)	0.01 (0.01)	0.01 (0.01)	0.00 (.)	0.03 (0.02)	0.03 (0.01)	0.02 (0.00)
Professionals	0.01 (0.00)	0.03*** (0.01)	0.02 (0.00)	0.04*** (0.00)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.02** (0.01)	0.03 (0.03)	0.07 (0.03)	0.00 (.)	0.01*** (0.00)
Technicians	0.03 (0.00)	0.07*** (0.01)	0.05 (0.00)	0.13*** (0.01)	0.03 (0.03)	0.13 (0.07)	0.00 (.)	0.00 (.)	0.06 (0.02)	0.08 (0.02)	0.10 (0.05)	0.03 (0.02)	0.03 (0.01)	0.10*** (0.01)
Clerks	0.04 (0.00)	0.09*** (0.01)	0.03 (0.00)	0.08*** (0.01)	0.00 (.)	0.09 (0.06)	0.00 (.)	0.00 (.)	0.03 (0.02)	0.06 (0.02)	0.03 (0.03)	0.08 (0.04)	0.04 (0.01)	0.08** (0.01)
Sales	0.05 (0.01)	0.06 (0.01)	0.07 (0.00)	0.08 (0.01)	0.03 (0.03)	0.09 (0.06)	0.20 (0.13)	0.00 (.)	0.08 (0.02)	0.05 (0.01)	0.03 (0.03)	0.05 (0.03)	0.03 (0.01)	0.08*** (0.01)
Trade	0.00 (0.00)	0.01 (0.00)	0.01 (0.00)	0.01 (0.00)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (0.00)	0.00 (.)	0.00 (.)	0.02 (0.01)	0.01 (0.00)
Craft	0.11 (0.01)	0.06 (0.01)	0.25 (0.01)	0.08*** (0.01)	0.37 (0.08)	0.13** (0.07)	0.00 (.)	0.31** (0.13)	0.17 (0.03)	0.09** (0.02)	0.26 (0.08)	0.07** (0.03)	0.26 (0.03)	0.10*** (0.01)
Machine	0.05 (0.01)	0.13*** (0.01)	0.13 (0.01)	0.14 (0.01)	0.03 (0.03)	0.00 (.)	0.10 (0.10)	0.08 (0.08)	0.09 (0.02)	0.13 (0.02)	0.10 (0.05)	0.10 (0.04)	0.09 (0.02)	0.08 (0.01)
Elementary	0.54 (0.01)	0.51* (0.02)	0.37 (0.01)	0.36 (0.01)	0.34 (0.08)	0.35 (0.10)	0.60 (0.16)	0.62 (0.14)	0.48 (0.04)	0.52 (0.03)	0.26 (0.08)	0.48* (0.06)	0.42 (0.04)	0.47* (0.02)
Armed forces	0.01 (0.00)	0.00** (0.00)	0.01 (0.00)	0.00** (0.00)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.03 (0.03)	0.00 (.)	0.01 (0.01)	0.00 (.)
No. observations	1584	1027	3097	1594	38	23	9	13	142	232	29	61	174	724

Source: ILFS (2008).

Notes: Standard errors are in parentheses. ***, **, and * indicate that the estimates for women differs from that for men at 0.01, 0.05 and 0.1 significance levels respectively.

In terms of the occupational characteristics, employed men and women are highly concentrated in elementary occupations across all marital classifications. There is not much difference in the average means of men and women employed in high skill occupations. For instance, 48 and 52 percent of separated men and women are employed in elementary occupations compared to 1 percent of separated men and women employed in official occupations or 6 and 8 percent in professional jobs. Other marital categories show that craft occupations are generally occupied by men, while machinery occupations (which are typically located in the garment and textile industry) are more common amongst women.

When comparing results for men and women by marital status in table 3.5, results show that gender difference are mainly observed for professional, technical and clerical occupations. The estimates of this variables are significantly different at 0.01 level for women never married, monogamously married and widowed from that men in the same marital categories.

The following section presents the earning data that will be used in this study which were given as monthly earnings expressed in 2008 prices. The currency of Lesotho is the Maloti, which is pegged at a one-to-one basis to the South African Rand. Due to the sensitivity surrounding the disclosure of wages, wages were reported as categories. Self-employed individuals and business owners reported their profits in the same categories, although for the sake of brevity all income from employment is referred to here as wages or earnings. Tables 3.6 show these wage categories by gender and by marital status, for individuals who are classified as employed.

Table 3.6: Sample distribution for the wage categories for men and women (%)

Wage Category	Never married men	Never married women	Mon-married men	Mon-married women	Pol-married men	Pol-married women	Cohabiting men	Cohabiting women	Separated men	Separated women	Divorced men	Divorced women	Widows men	Widows women
1- 299	26.48	17.76***	5.78	13.32	2.63	17.65	25.00	41.67	16.15	21.33	8.33	12.73	12.88	22.07
300-499	20.20	19.25	6.25	14.32	7.89	5.88	0.00	16.67	16.92	13.33	12.50	7.27	14.11	16.15
500-999	24.81	39.68	22.83	39.81	7.89	47.06	50.00	33.33	36.15	42.67	29.17	50.91	17.18	35.41
1000-1999	15.73	13.00*	26.53	14.79	28.95	0.00***	12.50	8.33	18.46	12.00**	16.67	16.36	20.25	13.93***
2000-4999	10.29	7.44***	30.40	11.50***	44.74	23.53*	12.50	0.00	9.23	8.00	29.17	7.27***	28.83	10.07***
5000-9999	2.12	2.48	5.72	4.71*	5.26	0.00	0.00	0.00	1.54	1.78	4.17	3.64	4.91	1.63***
10000-19999	0.23	0.30	1.61	1.14	0.00	5.88	0.00	0.00	0.77	0.89	0.00	1.82	0.00	0.44
20000-49999	0.15	0.10	0.57	0.40	2.63	0.00	0.00	0.00	0.77	0.00*	0.00	0.00	0.00	0.15
50000+	0.00	0.00	0.30	0.00**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.84	0.15***
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100
No. of observations	1322	1008	2974	1487	38	17	8	12	130	225	24	55	163	675

Source: ILFS (2008). Notes: ***, **, and * indicate that the estimates for women differs from that for men at 0.01, 0.05 and 0.1 significance levels respectively.

A glance at table 3.6 shows that wage distribution is sparsely represented by the sample mainly the wage categories R10 000 to R50 000+. We see that in this wage categories, it is men who are represented more than women. For instance, 0.57 and 2.63 percent of married men and 0.77 percent of separated men earn wages between R20 000- R49 999. This could suggest that high paying jobs might be reserved more for men. Lower wage categories are represented by a larger percentage of men and women in their respective marital statuses. However, men still dominate more than women. The wage category of R1-299 show that 17.65 percent of polygamously married women are in this wage category compared to 8.33 percent in men in the same marital category. However, still looking at the same marital category for higher wage category (R1 000-1 999) 28.95 percent of men fall in that category and no women earn that amount. This again is expected given that the highest employer in Lesotho is the textile and garment sector which offers salaries ranging from R800 to R1 000. For men, it is at low wage categories (R1-299 and R300-499) where there are more never married. As the wage distribution increase we see that married (monogamous or polygamous) men are represented more. This could then suggest that like theory predicted, marriage leads to increased wages for men and labour market favours married men more. For women, results are not as theory has previously suggested. In Lesotho, married women are represented more in higher wage categories than unmarried women. This could suggest that married women are likely to earn more than their unmarried counterparts.

When looking at t-test results for table 3.6, at a glance most of the estimates reveal that gender differences are not significant. For example, there are no significant gender differences in all the earnings categories between men and women who are cohabiting. The same applies for the wage category R300-499 where all marital categories the gender differences are insignificant. Part of the reason for the lack of significant differences may be that some of the sample sizes are very small. The regression analysis in Chapter 4 will allow for these differences to be examined in a multivariate context without needing to split the sample by marital status.

A limitation of the study is thus its collection of earnings data, in that it does not report exact hourly/monthly earnings for each individual but rather it categorises the earnings. This problem will be overcome in the estimation of the earnings regression equations in Chapter 4 through the use of interval regression methods. The method itself will be explained further in the next chapter.

3.4 Conclusion

This chapter began by discussing data that will be used in the study. The study will use secondary data from the Integrated Labour Force Survey, conducted in 2008 by the Bureau

of Statistics Lesotho. The data were gathered from 12 000 households across Lesotho and the survey's main aim was to look at the size, spatial the distribution of the labour force, and analysing market related characteristics. The chapter further explained that the sample which will be used throughout the study will consist of individuals between ages 15 to 65, categorised into seven different marital status groups.

The majority of the sample is dominated by men and women who have either never married or are monogamously married, as they are marital categories represented by large numbers regardless of their labour market status. Women's employment is strongly negatively associated with monogamous marriage, and there are some descriptive suggestions that the lack of a partner may drive women into the labour market.

Most of the chapter presented and discussed descriptive statistics for three sub-samples, namely the economically inactive, unemployed (defined as those actively searching for work), and employed. Across all labour market statuses, the youngest group were men and women who have never been married. The oldest groups for the inactive sample were widowed men and women, whereas for the unemployed and employed it was men in polygamous marriages.

Additionally, educational characteristics for the inactive population showed that those who are inactive are on average more likely to have primary education than no education. This was an interesting finding as the opposite was expected. Overall, the education results suggest that the factors that determine labour market access may differ substantially by gender. This was supported by the findings, where men with no formal education search for work and for women it was though with primary education. The geographical distribution revealed that the sub-sample that was found most in the urban areas were the employed. These results suggest that in Lesotho living in an urban area is likely to guarantee an individual employed. Additionally, there are more women than men live in urban area. Household characteristics revealed that most households have children below the age seven and in school going years. When comparing the three sub-samples, it was found that the average number of children under the age of 7 in the household for employed men and women is smaller than for the unemployed or inactive, across all the marital categories. Men and women in cohabiting relationships had the least presence of children, while monogamously and polygamous married men and women had on average the largest presence of children in their households Furthermore, it was found that, there are very few adults above the age of 65 in all households across the different marital status indicators. The least number was found for the employed and this could be that they are engaged in labour market activities and they cannot take care of the elderly. The results for household production were like those discussed in chapter two, where it was argued that women engage more in household work than men.

The chapter also looked at the distribution of earnings across gender and marital status. The distribution of earnings revealed that men are represented more than women in high paying earnings (R10 000 – 50 000+), which could suggest that high paying jobs might be reserved more for men. For men, it is at low wage categories (R1-299 and R300-499) where there are more never married. As the wage distribution increase we see that married men are represented more. This could then suggest that like theory predicted, marriage leads to increased wages for men and labour market favours married men more. For women, married women are represented more in wage categories than unmarried women suggesting that married women are likely to earn more than their unmarried counterparts.

One of the objectives of this study is to examine the labour market differences by marital status and by gender. Therefore, t-test were conducted on the descriptive statistics results throughout the chapter. The results for men are base categories and they were compared to those of women to see if the estimates are significantly different from each other. Across the chapter, it was observed that most of gender difference existed mainly for men and women in monogamous marriage, never been married and widowed. There is could be concluded that means estimated are different by for men and women by marital group. The next chapter will try and explain the role of marital status in the labour market of Lesotho in a multivariate context. Moreover, it describes the methodology and the econometric models that will be used for the analysis. The various covariates discussed in this chapter will be combined in the next chapter so as to identify their importance in the presence of other variables, in the econometric models. These models will be used to determine the significance of marital status and other factors in explaining the stages of the labour market process, namely, labour force participation, employment and earnings.

Chapter four: Methodology and model estimation

The previous chapter provided a detailed description of the data being used in this study which comes from Lesotho's Integrated Labour Force Survey. The chapter examined marital status by gender, the sample distribution by individual characteristics, and the distribution of earnings by gender and marital status. Educational results highlighted that the maybe other factors that determine labour market access which may differ substantially by gender. It can also be argued that those in polygamous marriages are economically and financially in a better position that other marital categories. They had the highest number of employed members (other than themselves) in their houses and more other income in the household. Further, as theory has predicted, on average married women have more child than any other marital category. The distributing of earnings, showed that men tend to be in higher earning distribution than women. Also, results supported those predicted by theory that married men tend are likely to earn more than unmarried men. This was seen where, in low wage categories it was unmarried men that dominated. While, for women it was found that married women earn more than their unmarried counterparts.

However, the drawback of interpreting descriptive statistics is that it is not possible to control for other observed differences between individuals. The next step in the analysis will therefore be to estimate the role of marital status in a multivariate context. These econometric models will determine the importance of the covariates in explaining the different stages of labour force process, namely labour force participation, employment and earnings. The modelling work that will be done in this chapter will be formulated using the analysis from the previous chapter.

This chapter will consist of three sections. The first section will give a detailed explanation on how the models to be in will be set out and the methodology used. The second part will estimate the models and discuss the results. Lastly, part 3 will conclude.

4.1 Econometric methodology

Three stages of estimation will be used in this study and they will be dealt with sequentially. The three stages are labour force participation, employment and earnings. The methodology used follows that of Bhorat and Leibbrandt (2001) for South Africa, but has not previously been applied to Lesotho. The three stages are described below.

The first stage involves estimating a probit model for labour force participation for a full sample of individuals who are likely to participate in the labour market, that is, those aged 15 to 65 who are not in school full-time. The probit model for labour force participation will estimate the probability that one actually participates. This model will give an insight into the factors that

determine how individuals are selected into the labour force. The model will be estimated separately by gender. In particular, the model will examine how labour force participation differs across marital status, in light of the literature explored in Chapter Two which suggested that participation is less (more) likely amongst married women (men) than unmarried women (men).

The labour force participation equation is given by:

$$LFP_i = \alpha_1 M_i + \alpha_2 X_i + \varepsilon_i \quad (1)$$

Where LFP_i is the binary choice variable showing if individual i participates in the labour force. The dependent variable LFP will take the values 0 and 1, where 1 represents those who participate and 0 represents non-participation. The independent variables (X_i) will include factors such as age, education characteristics, household characteristics such as income from other employed members (the square of this variable will be included so as to allow for non-linearity), household production, household composition (the number of adult household member above the age of 65, the number so children below the age of 7, and the number of children between ages 8-14) and location. The variables of interest, M_i, represent the group of dummy variables representing one's marital status. ε_i is the error term. The equation will be estimated by a probit model to determine factors that determine one's decision to participate in the labour force. The second step is to estimate another probit model from the reduced sample of those who participate in the labour force, which will look at the probability of being employed. This distinction between participation and employment is important because of high unemployment rates in Lesotho, where there are large number of people willing to enter the labour force but unable to find employment (ILFS, 2008). Again, the variable of interest will be marital status. The question that this estimation will seek to answer is whether men and women with different marital statuses experience different outcomes when searching for work. If so, their marital status may say something about their motivation during job search, or their attractiveness to potential employers.

The employment equation will be given by;

$$E_i = \beta_1 M_i + \beta_2 Z_i + \mu_i \quad (2)$$

The dependent variable E_i will take the values 0 and 1, where 1 represents those who are employed and 0 otherwise. The independent variables (Z_i) will include personal characteristics such as age, education, location, engagement in household production. Again, M_i represents the group of dummy variables representing one's marital status and μ_i, and is the error term.

The last model will be an earnings equation using the sample of those who find employment. This will highlight the factors that determine the earnings of the employed. For the purpose of the study, the earnings equation will be estimated using the log-linear interval regression method because in the ILFS 2008 earnings responses were captured as intervals. Here, the key question is whether earnings differ by marital status. If so, this is likely to reflect the explanations discussed in Chapter 2, such as specialisation within the household or selection into marriage.

The earnings equation will be given as:

$$lnW_i = б_1 M_i + б_2 G_i + Ч_i \quad (3)$$

The dependent variable will be the log of monthly wages (lnw_i) and the independent variables (G_i) will be the different occupational categories, the sector of employment, education, potential experience, location, and hours worked. Again, M_i represents the group of dummy variables representing one's marital status and $Ч_i$ is the error term.

The separation of the equations into labour force participation, employment and earnings will help in understanding how different variables affect each labour market outcome. This is because not the same set of variables affects each equation. The labour market participation equation is usually affected to a large extent by household characteristics such as the number of children and other household income (Bhorat and Leibbrandt, 2001). The employment equation on the other hand depends on the personal characteristics of the individual looking for a job such as their education and location. The earnings equation also includes many of these characteristics from the employment selection equation. However, the effects of the variables are not necessarily the same. For instance, age can be used to calculate an approximate value for experience in the earnings equation, whereas in the determination of employment, age itself is likely to be more important than the amount of experience. Though, having some experience may still matter. Further, wage determination depends on the characteristics of the job that one has and the hours dedicated to the job (Bhorat and Leibbrandt, 2001).

In general, there are potential concerns that the results from earnings equations need to be interpreted with caution as there might be presence of measurement error due to the way in which wages are measured, which might lead to biased estimates (Keane, 2011). This problem is partly overcome in the ILFS through the use of bracketed-response options on earnings. Although the fact that actual earnings values are not reported presents a disadvantage for some forms of analysis, respondents are less likely to report their earnings interval in error, than their actual earnings.

4.1.1 Heckman Selection Approach

A potential concern is that the employment and earnings equations may yield biased estimates if they are estimated from sub-samples selected on a non-random basis. If unmeasured variables affect both the outcome of interest and the probability of being in the sample, then estimations may suffer from sample selection bias. To control for the presence of sample selection into participation and employment, the Heckman selection approach will be used (Heckman, 1979).

The Heckman selection method is based on a two part model, where one part is the selection equation and the other is the outcome equation. By accounting for selection of the sample, it aims to produce unbiased estimates of coefficients in the outcome equation. The selection equation contains a binary outcome reflecting whether or not an observation is part of the sample, which is estimated using the probit model (Sackey, 2005).

In this study, the sample selection problem may arise when individuals decide not to work in the labour market and rather participate in home production, or if people choose to participate but cannot find work. If the choice between labour market activities and home production, or ability to find work, is not random, in unmeasured ways that are correlated with employment or earnings respectively, then one would observe inconsistent ordinary least squares (OLS) estimates. However, the Heckman selection model solves this problem by treating the unobserved or unmeasured variables as omitted (Dolton and Makepeace, 1986).

The study will have two levels of selection: into labour force participation, and employment. It will therefore follow the method of Bhorat and Leibbrandt (2001) to control for selection. Firstly, the probit model for labour force participation will be estimated and from that estimation the inverse mills ratio (λ_1) (also known as Heckman's Lambda) will be derived which will then be included in the employment probit model.

The employment equation will now be given as

$$E_i = \beta_1 M_i + \beta_2 Z_i + \lambda_1 + \mu_i \qquad (4)$$

The inclusion of $\lambda_1$will permit the probit model for employment to be estimated conditional on positive participation. Following Bhorat and Leibbrandt (2001), household size and composition variables act as exclusion restrictions in this estimation. The Heckman estimate of equation (4) will consist of two parts. The first part will be a binary selection equation, the probability of observing LFP_i =1 or LFP_i =0. The second part describes the probability of employment for those with positive participation. The employment probit model will then be estimated and from it a new inverse mills ratio (λ_2) will be derived. Equation (4) will give the

probability of earnings being observed given the independent variables, an after controlling for selection into participation. The new inverse mills ratio will reflect an individual's selection into employment, and thus into the earnings equation.

The second inverse mills ratio (λ_2) will be included in the earnings equation, which will show earnings that are conditional on labour force participation and selection into employment (Bhorat and Leibbrandt, 2001). The new earnings equation will be given as

$$lnW_i = б_1M_i + б_2G_i + \lambda_2 + Ч_i \quad (5)$$

Suitable exclusion restrictions, as available in the ILFS 2008, will be identified for each level of selection. Similar to Bhorat and Leibbrandt (2001), age acts as an exclusion restriction in this model. For the regression, the earnings equation will be estimated using interval regression rather than OLS, to deal with the earnings data having been collected in intervals without exact values. The results of interval regression estimation are interpreted in the same way as OLS results.

The results of equation 2 and 4 will be compared, and the same will be done for equations 3 and 5.

The two equations (equations 4 and 5) will contain a set of dummy variables (M_i) for the marital status categories used in the study and G_i and Z_i are vectors of control variables. This will be main variable of interest, to see how marital status impacts employment and earnings when correcting for selection. Further, each model will be estimated separately by gender because there are expected to be different determination processes for men and women.

It should also be noted that the models will be estimated with and without correcting for selection. If there is no correlation between the error terms of the selection and outcome equations, then the selection equation is unnecessary and a simple outcome model can be used (Verbeek, 2012). However, even in the presence of a significant selection bias, if the exclusion restrictions used to identify the selection equation are not appropriate, then the results may not be robust. It must be acknowledged that it is difficult to justify the choice of exclusion variables used in the main equations for the employment and earning equations. This is because the dataset is very limited in terms of the availability of exclusion restrictions, and therefore the study has chosen to use the same variables as Bhorat and Leibbrandt for comparability purposes. Nonetheless, if these variables have an independent effect on the outcome of interest, then the selection model estimates may be biased. Therefore, the models will be estimated with selection-corrected and uncorrected estimates so as to compare the

two methods, as well as conducting hypothesis tests on the significance of the sample selection term.

4.2 Model estimation and results

Tables 4.1 to 4.3 present the results for various factors that influence the probability of participating in the labour market and being employed, as well as earnings levels for those who are employed. Most of the covariates used in this study are dummy variables and for those dummies, their reference categories are as follows:

Marital status: never married

Education: No formal education

Location: Rural

Occupation: Elementary workers

Sector: Private informal sector

As mentioned, the models will be estimated separately for men and women. For comparison purposes, results will be displayed in the same table for the particular model of interest.

4.2.1 Labour force participation equation

Table 4.1 represents the results of the labour force participation equation $LFP_i = \alpha_1 M_i + \alpha_2 X_i + \varepsilon_i$ indicating the decisions that determine participation in the labour market for men and women. The simple estimation is given by specification I which shows the participation decision in the labour market as a function only of the six marital status indicators (with never married as the omitted category). For men, both monogamously and polygamously married men are significant at the 1 percent significant level more likely to participate in the labour market than men who have never been married. In contrast to widowed men who are significantly less likely to participate in the labour market compared to men who have never married. The coefficients of cohabiting, separated, and divorced men are statistically insignificant. For women, the results are substantially different from that of men. Monogamously and polygamously married and widowed women are less likely to participate in the labour market compared to women who have never been married. These effects are quantitatively very large, especially for the two categories of marriage, and are also highly statistically significant at the 1 percent level. On the other hand, separated women are likely to participate in the labour force than those who have never been married. Cohabiting and divorced coefficients are statistically insignificant in determining women's decision to

participate in the labour market. When comparing the results for men and women (see appendix A), the results from specification I indicate that the estimates for women in monogamous marriages, separated, widowed and divorced differ from that for men at the 0.01 significance level. The cohabiting variable indicate that the gender difference is not significant.

Table 4.1: Labour force participation equations for men and women

	Specification I		Specification II	
	Male	Women	Men	Women
Monogamously Married	0.293***	-0.490***	0.246***	-0.436***
	(0.025)	(0.029)	(0.037)	(0.036)
Polygamously Married	0.332**	-0.509***	0.504***	-0.507***
	(0.141)	(0.144)	(0.161)	(0.159)
Cohabiting	0.231	0.153	-0.035	-0.022
	(0.261)	(0.247)	(0.279)	(0.278)
Separated	-0.036	0.129**	-0.004	0.098
	(0.068)	(0.062)	(0.078)	(0.071)
Divorced	0.075	0.227**	0.118	0.171
	(0.161)	(0.109)	(0.182)	(0.124)
Widowed	-0.109*	-0.327***	0.164**	-0.098**
	(0.061)	(0.036)	(0.074)	(0.049)
Primary Education			0.244***	0.316***
			(0.034)	(0.072)
Secondary Education			0.451***	0.517***
			(0.042)	(0.074)
Tertiary Education			1.101***	1.672***
			(0.111)	(0.119)
Age			0.105***	0.104***
			(0.007)	(0.007)
Age squared			-0.002***	-0.001***
			(0.000)	(0.0001)
Urban			0.714***	0.802***
			(0.037)	(0.031)
No. children below 7			-0.077***	-0.099***
			(0.01)	(0.014)
No. children 8-14			-0.046***	-0.085***
			(0.014)	(0.014)
No. adults above 65			-0.134***	-0.094**
			(0.028)	(0.031)
No. other employed household members			0.168***	0.085***
			(0.017)	(0.016)
Other household income			-0.026**	-0.027***
			(0.011)	(0.008)
Other household income squared			0.001	0.001**
			(0.0001)	(0.0002)
Household production			-0.547***	-0.627***
			(0.027)	(0.031)
Constant	0.088***	0.177***	-1.631***	-1.542***
	(0.019)	(0.024)	(0.118)	(0.1321)
No. observations	11613	11893	11178	11511
Prob>chi2	0.000	0.000	0.000	0.000

Source: ILFS (2008).

Notes: Standard errors are in parentheses.

* Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.

When additional regressors are added to the model, in specification II, the size of the marital status participation rate coefficients for men into the labour market increase considerably but there is also some slight declines with some variables, while the significance levels remains similar. Thus, the observed characteristics serve to reinforce the differences in participation by marital status. Monogamously and polygamously married and widowed men's coefficients remain significant in explaining men's participation compared to those never married. One interesting change is that the coefficient on widowed men switches from being negative and significant to positive when controlling for other characteristics. This might be due to the fact that, on average, widowed men are less likely to participate, but once there is control for the fact that they are older and less educated, than never married men, their chances of participating are actually higher. The coefficients for cohabiting, separated and divorced men remain insignificant. The addition of other regressors for women changes the significance of marital status. However, the magnitude of the difference in participation between never married and other women generally declines by a small margin. Now, it is only women in monogamously or polygamous marriages or who are widowed that remain significantly less likely to participate than women who have never been married. The magnitude of the effect is substantially lessened. These changes suggest that women in these marital status categories possess other observable characteristics that make them less likely to participate than never married women, but that controlling for such characteristics only somewhat explains their lower participation. The other marital status indicators show a slight increase in women's probability of participating in the labour market, although not significantly different from that of never married women. When comparing the results for men and women (see appendix XX) they show that the estimates for women differ from that for men at 0.01 significance level looking at those in the following marital statuses; monogamously married, separated, divorced and widowed. The other two marital categories (polygamous and cohabiting) indicate that the gender differences are not significant.

The other control variables in the participation equation are not the main focus of this research, but they will be discussed briefly below. Education is found to be important in determining one's decision on whether to participate in the labour market: those who participate have better educational qualifications than those who do not participate. This finding agrees with that for South Africa (Bhorat and Leibbrandt, 2001). The addition of other characteristics show that older individuals are more likely to participate in the labour market, but at a diminishing rate.

Living in an urban area significantly increases the likelihood of one's participation in the labour market as opposed to those that live in the rural areas.

The involvement in household production is significant for both men and women and it decreases their likelihood of participating in the labour force as compared to those who are not participating in household production. This is indeed in line with theoretical predictions.

The household's characteristics are represented by covariates for household composition (the number of children below age 7, number of children between ages 8-14, number of adults above age 65, and other employed household members) and by other household income and income squared. The household composition variables are significant for both genders. The results are as expected for women, as they show that the presence of children significantly reduces participation at 1 percent significant level. It is also surprising that the effect of children is also significant and negative for men. However, the effect is much smaller in magnitude for men than for women, and this is the case especially so for older children.

The presence of other employed adults in the household coefficient is positive and significant at all levels for males and females. This may indicate that when a household member is employed, other members are more likely to learn about employment opportunities, and therefore more likely to participate. For example in South Africa, one of the most common way in which people learn about employment opportunities is through family members and friends (Posel *et al*, 2014).

Lastly, presence of elderly adults in the household is also significant and negative for both men and women, indicating that the presence of adults above the age of 65 in a household deters individuals from participating in the labour force. This maybe because the aged person is a pensioner as there is a universal state pension in Lesotho which is received by anyone aged 70 and above. Further, for previous public sector employees, retired at the age of 60 they receive monthly pension.

4.2.2 Employment equation

The previous section looked at factors that determine men and women's labour market participation, given the different marital status indicators. This section will retain the sample of those who participate in the labour market, and estimate the probability that they find paid employment. The results for the employment equation ($E_i = \beta_1 M_i + \beta_2 Z_i + \mu_i$) are presented in tables 4.2, where specification I and II present the simple employment probit that does not take into account the selection factor.

Specification I shows the results of the simple estimation of the differences in employment probability based on marital categories (never married being the omitted category) for men and women. With the exception of cohabiting men, all coefficients for men are positive and

are significant at the five percent level or better, showing that being a man increases the probability of a man being employed compared to those that have never been married. For women, only those who are separated or widowed are significantly more likely to be employed than women who have never married. Women in all other marital status categories have employment probabilities that are not significantly different than never married women. Further look at the results from specification I (see appendix B) indicate that separated, divorced, widowed and monogamously married coefficients of women differ from that of men at 0.01 significance level.

Table 4.2: Employment equations for men and women

	Specification I		Specification II		Specification III	
	Men	Women	Men	Women	Men	Women
Monogamously Married	0.408*** (0.036)	-0.014 (0.043)	0.203*** (0.048)	-0.111** (0.051)	0.108** (0.044)	0.147*** (0.046)
Polygamously Married	0.400** (0.197)	0.188 (0.255)	0.083 (0.221)	-0.035 (0.266)	-0.042 (0.197)	0.177 (0.222)
Cohabiting	-0.102 (0.336)	0.181 (0.336)	-0.481 (0.354)	0.131 (0.369)	-0.406 (0.315)	-0.196 (0.312)
Separated	0.214** (0.105)	0.325*** (0.088)	0.125 (0.113)	0.187* (0.098)	0.123 (0.100)	0.141 (0.086)
Divorced	0.671** (0.279)	-0.081 (0.137)	0.489 (0.297)	-0.384*** (0.149)	0.363 (0.263)	-0.328** (0.132)
Widowed	0.369*** (0.1)	0.272*** (0.056)	0.191 (0.113)	-0.008 (0.073)	0.140 (0.099)	0.081 (0.062)
Age			0.019*** (0.010)	0.063*** (0.010)	-0.029*** (0.009)	-0.015 (0.010)
Agesq			-0.0001 (0.0001)	-0.001*** (0.000)	0.001*** (0.0001)	0.0004*** (0.0001)
Primary education			-0.069 (0.053)	0.046 (0.138)	-0.072 (0.045)	-0.039 (0.103)
Secondary education			-0.034 (0.059)	0.246* (0.140)	0.062 (0.051)	0.026 (0.105)
Tertiary education			0.781*** (0.134)	1.032*** (0.170)	0.699*** (0.124)	0.647*** (0.135)
Urban area			0.219*** (0.043)	-0.055 (0.057)	-0.079* (0.043)	-0.016 (0.048)
Household production			-0.423*** (0.038)	-0.515*** (0.045)	-0.163*** (0.039)	-0.219*** (0.046)
Constant	0.533*** (0.027)	0.540*** (0.034)	0.291 (0.177)	-0.562*** (0.212)	1.479*** (0.174)	1.129*** (0.204)
Rho					-0.801*** (0.064)	-0.859*** (0.049)
No.observations	6893	5380	6566	5046	11223	11582
Prob>chi2	0.000	0.000	0.000	0.000	0.000	0.000

Source: ILFS (2008).
Notes: Standard errors are in parentheses.
* Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.

When additional regressors are included in the employment equation, as shown in specification II, the effect of marital status on the probability that men who participate in the labour market find a job declines substantially. The coefficient of polygamously married, cohabiting, separated, divorced or widowed men become insignificant in employment determination, and only monogamously married men remain more likely to be employed than

never married men. This is an interesting change, as the results are indeed in line with theory that marriage makes men more favourable to employees. Though it would have been expected that polygamous marriage would be important in employment determination. It could also suggests, that marital status is considered more than one's individual characteristics.

Turning to females, there are changes in the observed results. With the addition of other characteristics, being monogamously married or divorced significantly decreases the probability of one finding employment compared to women who have never been married, with the effect being largest for divorced women. The probability of being employed increases for separated women as opposed to those never married, but is only significant at 10 percent significant level.

The age and age squared coefficients have expected signs and they are all significant. They show that as a person gets older, the probability of them finding employment increases at a diminishing rate for both men and women. The age-related increase in the likelihood of finding employment is especially large for women. This is further supported by the t-test results (see appendix B) specification II, where it is observed that the age coefficient for women differs from that of men at the 0.01 significance level.

The education covariates show that men with tertiary education have a higher chance of being employed than those with no education. For women, those with secondary and tertiary education are significantly more likely to find employment when compared to women with no formal education. The greatest effect is found with tertiary education for both genders.

The location variable is positive and statistically significant at 1, 5 and 10 percent significance levels for men. This means that men living in urban areas are more likely to be employed compared to men living in rural areas. For women, living in urban areas plays no role in determining employment compared to those in rural areas as the coefficient is insignificant.

The involvement in household production significantly decreases men and women's likelihood of being employed. One would have expected an insignificant coefficient on men's household production, meaning it would not play any role for men when they seek employment. For women, it was expected as there are other duties such as child rearing, cooking and other household chores that may prevent them from actively looking for employment. However, there is a likelihood that this variable is endogenous. Individuals who cannot find employment may be more likely to spend their time in home production as an alternative to paid employment. If so, there is a reverse causality which may bias this coefficient. When the variable is removed from the model does not substantially change the other findings

4.2.3 Employment equation with selection

The first empirical section of this chapter considered factors that determine participation in the labour market and retained the sample of those people who take part in the labour market, which was used to estimate the probability that those who participate find employment. Doing so assumes that labour force participants are a random sample of all adults. This part of the analysis will estimate $E_i = \beta_1 M_i + \beta_2 Z_i + \lambda_1 + \mu_i$ taking into consideration selection into participation, using a Heckman selection model. The selection model for those who participate is estimated in Table 4.1 and results are shown in Specification III of Table 4.2. Household composition and income were treated as exclusion restrictions in the employment equation. These variables are seen to influence the decision of whether to participate rather than affecting the process of finding a job (Bhorat and Leibbrandt, 2001).

The discussion will begin with the coefficient rho which is the sample selection effect. Rho is the correlation coefficient between the participation and employment equation, measuring the sample's selectivity bias (Bhorat and Leibbrandt, 2001; Veerbek, 2012; & Vartanian, 2009). The estimates of rho are negative and significant, which means that the error terms (unobserved characteristics) in the two models are negatively correlated to each other. This means that there are unobserved characteristics that increase the probability of men and women being employed, but which decrease the likelihood of participation. This finding for Lesotho is similar to that of Bhorat and Leibbrandt (2001) for South Africa. One fails to reject that the correlation between the error terms of the two models is non-zero and thus labour market participants are a non-random sample and using methods that correct for sample selection is important in obtaining unbiased estimates in the employment equation.

In the sample selection corrected results, only monogamous marriage is significant in increasing the probability of being employed for men, compared to men who have never married. For women, being monogamously married significantly increases the probability of women being employed at 1 percent significance level, while being divorced decreases the likelihood of women being employed, compared to women that have never been married. When compared to the model that did not control for selection, the marital status findings changed little for men, although the size of the effect of monogamous marriage on employment is halved. For women, the effect of monogamous marriage changed from negative to positive when controlling for selection. The sample of married women is likely to be most affected by self-selection, in that such women may choose not to seek work outside the home and rather they rely on their husband's earnings (Lee, 1997; Killewald and Gough, 2010) These results suggest that not controlling for women's selection into the labour force participation seriously biases the estimate of the relationship between marriage and employment for women.

Although age is not significant in determining employment for women in this model, age squared is significant, suggesting a non-linear relationship between age and employment probability. For men, both the age variables are significant in determining employment, but the signs are the opposite of the previous model. Thus as men get older they are initially less likely to find employment, but this probability later rises with age.

The education covariates show that, having tertiary education significantly increases the likelihood of both men and women being employed as compared to those without education. One interesting finding is that primary and secondary schooling are not significant in explaining the likelihood of men and women finding employment, although they are significant in explaining the probability of participating.

The location results give surprising outcome for men, as the coefficient is negative showing that men living in urban areas are significantly less likely to find employment as compared to those living in rural areas. This outcome is not what one would have expected, as it can be assumed that urban areas have variety of employment opportunities. For women, the location variable is insignificant in their employment determination.

The involvement in household production significantly decreases the probability of men and women being employed, which supports findings in the literature, although the effects are smaller than in the model without controls for selection.

4.2.4 Earnings equation

This section will analyse the effect of marital status for males and females who are employed and report a positive earning. The sample includes both wage employed and self-employed individuals. Table 4.3 presents the estimates from the earnings equation (3) for males and females, estimated using interval regression.

The results from specification I for men indicate that with the exception of polygamously married and cohabiting men, all the marital status coefficients are positive and significant. These means that being monogamously married, separated, divorced or widowed increases the earnings of employed men compared to their unmarried counterparts. The largest effect is for married men, and this could suggest productivity increased derived from marriage or favouritism in the labour market towards married men. The results for women show that being monogamously married or divorced are significant in increasing earnings compared to unmarried women. Women who are cohabiting earn significantly less than never married women. These finding are interesting as the literature in chapter two suggested that married women may earn less than unmarried women. However, without controlling for other

characteristics, these results show that women earn a premium for marriage, although it is much smaller than that of men.

The t-test results (see appendix C) show that gender difference are significant at 0.01 significance level for women who are monogamously married, separated and widowed. Whereas, the estimate for divorced women differ from that of men at 0.05 significance level.

Table 4.3 Earnings equation, by gender

	Specification I		Specification II		Specification III	
	Men	Women	Men	Women	Men	Women
Monogamously married	0.934***	0.261***	0.271***	0.044	0.222***	0.222***
	(0.035)	(0.041)	(0.038)	(0.033)	(0.039)	(0.039)
Polygamously married	1.203	0.346	0.489***	0.414**	0.443**	0.395**
	(0.169)	(0.246)	(0.159)	(0.184)	(0.170)	(0.188)
Cohabiting	-0.099	-0.607**	-0.243	-0.435**	-0.247	-0.341
	(0.373)	(0.307)	(0.326)	(0.212)	(0.323)	(0.213)
Separated	0.213**	-0.018	-0.049	-0.084	-0.047	-0.066
	(0.096)	(0.075)	(0.082)	(0.058)	(0.083)	(0.057)
Divorced	0.649***	0.243*	-0.156	0.050	-0.163	0.058
	(0.213)	(0.139)	(0.180)	(0.106)	(0.179)	(0.105)
Widowed	0.695***	-0.007	0.172**	-0.026	0.156*	0.044
	(0.086)	(0.050)	(0.080)	(0.045)	(0.081)	(0.045)
Age			0.048***	0.025***	0.022**	-0.019**
			(0.008)	(0.007)	(0.009)	(0.009)
Age squared			-0.001***	-0.0003***	-0.0001	0.0003***
			(0.0001)	(0.000)	(0.0001)	(0.000)
Primary education			0.147***	0.283**	0.142***	0.256**
			(0.041)	(0.113)	(0.041)	(0.115)
Secondary education			0.391***	0.489***	0.395***	0.454***
			(0.046)	(0.115)	(0.047)	(0.117)
Tertiary education			1.069***	1.189***	1.064***	1.122***
			(0.082)	(0.127)	(0.082)	(0.129)
Urban area			-.060**	0.092***	-0.231***	-0.159
			(0.029)	(0.027)	(0.042)	(0.039)
Experience			0.074	0.139***	0.069	0.119***
			(0.048)	(0.046)	(0.048)	(0.046)
Experience squared			0.013*	-0.008	0.013*	-0.006
			(0.008)	(0.008)	(0.008)	(0.008)
Hours worked			0.011***	0.018***	0.010***	0.017***
			(0.003)	(0.003)	(0.003)	(0.003)
Hours worked squared			-0.0001***	-0.0002***	-0.0001***	-0.0002***
			(0.000)	(0.000)	(0.0002)	(0.000)
Officials			0.366***	0.701***	0.394***	0.717***
			(0.085)	(0.096)	(0.085)	(0.095)
Professionals			0.665***	1.001***	0.678***	1,023***
			(0.126)	(0.095)	(0.125)	(0.094)
Technicians			0.133*	0.460***	0.171**	0.520***
			(0.076)	(0.056)	(0.076)	(0.056)
Clerks			0.097	0.293***	0.097	0.317***
			(0.072)	(0.049)	(0.072)	(0.049)
Sales			0.123**	0.182***	0.143**	0.229***
			(0.058)	(0.051)	(0.058)	(0.051)
Trade			-0.187	0.094	-0.199	0.115
			(0.165)	(0.153)	(0.172)	(0.158)
Craft			0.246***	-0.149**	0.245***	-0.097*

	Specification I		Specification III		Specification III	
	Men	Women	Men	Women	Men	Men
			(0.035)	(0.051)	(0.035)	(0.050)
Machine			0.362***	-0.038	0.362***	-0.052
			(0.045)	(0.043)	(0.045)	(0.043)
Armed forces			0.499***	0.760	0.481***	0.762
			(0.157)	(0.512)	(0.157)	(0.503)
Public sector			0.715***	0.654***	0.704***	0.653***
			(0.055)	(0.049)	(0.055)	(0.049)
Private formal sector			0.746***	0.470***	0.728***	0.468***
			(0.029)	(0.031)	(0.030)	(0.031)
Rho					-0.489***	-0.603***
					(0.087)	(0.069)
Constant	6.356***	6.449***	4.3665.340***	4.379***	5.174***	5.622***
	(0.029)	(0.032)	(0.181)	(0.186)	(0.233)	(0.232)
No. observations	4659	3479	4231	3109	4137	3062
Prob>chi2	0.000	0.000	0.000	0.000	0.000	0.000

Source: ILFS (2008).

Notes: Standard errors are in parentheses.

* Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.

In specification II, other regressors which are important in the determination of earnings for individuals are added. These additional regressors include personal productivity characteristics, such as education and experience, as well as job characteristics, such as occupation and working hours. The inclusion of these regressors leads to a decline in both the magnitude and the significance of the effect of marital status on women and men's earnings. For men, the coefficients of monogamously, polygamously married and widowed are significant in increasing earnings compared to never married men. The results for women show that polygamously married have significantly higher earnings than their unmarried counterparts. While, cohabiting women still earn less than their never married counterparts. These changes suggest that marital status is correlated with productivity and job characteristics for both men and women, such that not controlling for these characteristics overstated the difference in earnings between individuals with different marital statuses. Results from appendix C show that gender difference are insignificant for those in polygamous marriages and cohabiting. Estimates of women in all other marital categories (monogamously married, separated, divorced and widowed) differ from those of men at 0.01 significance level.

The age covariates have expected signs and significance for both men and women. As one gets older, they are significantly likely to earn more though at a diminishing rate. The education coefficients for men and women are significant and positive showing that having a primary, secondary and tertiary education increases earnings for men and women compared to their counterparts without formal education. These findings for Lesotho if the labour market functions properly are expected. The results are also are in line with theory and other empirical studied have found that there is a positive relationship between schooling and earnings (Kerr and Teal, 2008)

Living in an urban area show unexpected effect on earnings as it is shows that men living in urban areas are significantly likely to earn less than those in rural areas. For females, those living in urban areas significantly (1 percent significance level) more likely to earn more than those in rural area. The amount of potential work experience (derived from the years that one has been engaged in their particular job as per the questionnaire questioning) that men have is not important in explaining their earnings. For women, experience has a positive and significant linear effect on earnings. The hours worked variables are significant at all levels for both men and women. Increasing the hours a man or woman works will lead to an increase, at a decreasing rate, in his/her monthly earnings.

The results by various occupation classifications reveal that for men who are in official, professional, technicians, craft, sales machinery and armed forces positions earn significantly more than their counterparts employed in elementary occupations. However, semi-skilled occupations (trade and clerks) are not important in the determination of earnings. Women employed in craft earn significantly lower earnings than women in elementary occupations. This type of occupation is usually male dominated and require much physical effort, so women in them usually are likely to be doing administrative work that does not pay well (Kanellopoulos and Mavromaras, 1999). In contrast, those in official, professional, technical, clerks and sales occupations earn significantly higher wages than those in elementary positions. One would have expected that the coefficient on machinery occupations would be significant for women, as the highest employer in Lesotho is the private sector dominated by the textile sector. Majority employed in that sector are women.

Working in the public or private-formal sector significantly increase the earnings of employed men and women, relative to those working in private informal sector at 1 percent significance level.

4.2.5 Earnings equation with selection

Table 4.3, specification III presents the results for equation (5) for employed men and women by marital status, after controlling for sequential selection into labour force participation and employment. The full results of the Heckman probit model of the earnings equation are found in appendix (XX).The results do not differ much compared to the previous section where earnings were estimated without sample selection as results are showing in specification II. Following Bhorat and Leibbrandt (2001), the exclusion restriction here is other household income, which is assumed to affect the probability of obtaining employment, but not the value of earnings once employed.

Starting with the sample selection effect (rho), the coefficient is significant and negative for both men and women, showing that there was significant sampling bias. The coefficient shows that wage earners are not a random selection of labour market participants, and justifies the use of the selection model in this section. The negative coefficients also suggest that the wage distribution is biased downwards compared to the case where individuals select themselves into employment randomly. Again, these selection findings are similar to those of Bhorat and Leibbrandt (2001) for South Africa.

The marital status covariates reveal that for men in monogamously and polygamous married and widowed have significantly higher earnings compared to never married men. For women the results show that those in monogamous and polygamous marriages, significantly likely to earn higher wages compared to never married women. The other marital coefficients are insignificant. The main difference from the results without controlling for selection is that here, monogamous marriage is positively associated with earnings for both men and women.

The educational covariates are significant at 1 percent level in increasing the earnings of men and women who are employed and report positive earnings compared to those who are without formal education. The coefficients have the expected signs and significance, with little change from specification II.

The location variable's effect has changed substantially from the equation (3) specification II, with the coefficient still being significant and negative for men but increased magnitude in its effect on earnings, whereas for women it is insignificant. This suggests that men living in rural areas earn more than those living in urban areas, after controlling for their other observable characteristics. The only other substantive change, compared to specification II, is that men who work as technicians earn more than elementary workers, although only significantly so at the ten percent level. Although, there is a significant sample selection effect, controlling for selection does not substantially change the estimates of the relationship between the observable characteristics and earnings, other than the effect of monogamous marriage on women's earnings.

The amount of potential work experience that men have is not important in explaining their earnings. For women, experience has a positive and significant with a diminishing effect on earnings. Like in specification II, hours worked variables are significant at all levels for both genders. An additional hour a man or woman works will lead to an increase, at a decreasing rate, in his/her monthly earnings.

The results by various occupations remain the same as those from specification II. The significances and signs of the coefficients does not change. The only change that is observed, is an increase the magnitude that the coefficients have on earnings.

Further, men and women employed in the public or private-formal sector significantly earn higher than those working in the private informal sector.

4.3 Discussion and Conclusion

This chapter set out to investigate the relationship between marital status and labour market outcomes using regression analysis. It began by outlining basic labour supply models that exist in the literature and the methodological approach that was used in the study. A three stage sequential labour market selection approach was used, which began by labour market participation, then modelled employment and lastly earnings.

The results show that not all marital statuses are important in determining an individual's outcomes in the labour market, although at least some of the marital indicators are significant in each stage. Differing results are found in each stage of the labour market and also by gender. In the participation equation, only monogamous, polygamous marriages and widowhood are found to be important in determining participation for both men and women, even after controlling for other observable factors. The employment equations show monogamous marriage positively determine men's employment and for women, monogamous marriage and divorce affect the probability of being employed, though negatively. The earnings results shows that men in monogamous and polygamous marriages and widowed have a positive impact on earnings. The earning results for women reveal that being in a polygamous marriage increase the earnings, while cohabiting reduces earnings. These findings for Lesotho support the arguments in the literature that marriage may increase men's productivity or be a desirable characteristic to employers as it can be seen that married men earn significantly higher than other men. Even in the presences of many other productive or personal control variables such as experience and occupation, the wage effect due to marriage still persist. For women, the model that does not control for selection reveals that only polygamous marriage raises earnings significantly, while cohabitation lowers earnings.

The significant sample selection terms show that there was selection bias in both the employment and earnings equations which needed to be corrected. The results thus show that there is indeed a systematic difference between those who choose to participate and those who do not, and between those who find employment and those who do not. These findings correspond with those for South Africa. Despite this result, however, there are not many differences between the estimates with and without controls for sample selection. One

possible explanation for such differences being small is the extent to which the chosen characteristics are able to control for selection and the validity of the exclusion restrictions. Although South Africa and Lesotho's labour markets are similar, it is possible that variables other than those used here, which were adopted from Bhorat and Leibbrandt (2001), might perform better in the analysis. However, this issue is beyond the scope of this dissertation, and further exploration of it is left for future research. Also, due to a lack of suitable exclusion restrictions in the ILFS data, this dissertation did not attempt to estimate selection into marital status, and this issue is also left to future research.

After controlling for selection into the various labour market states, it is observed that most of the marital status classification are insignificant in either determining employment or earnings. When taking account of selection in the employment equation, results showed that for men selection decreases the magnitude in which marital status has on the likelihood of being employed. With and without selection, divorced men are less likely to be employed compared to their never married counterparts. The earning equations also showed similar results to those of the employment equation. The only difference in this case was of men with and without sample selection, men in monogamous and polygamous marriages earn more than those that have never been married. Other marital classifications are insignificant. For women, the earnings equation with and without sample selection shows that women in polygamous marriages earn more than those who have never been married.

Across all three equations, results show that personal, productive and occupational characteristics are also important in determining participation, employment and earnings. When accounting for sample selection, similar results are from regression without selections are found. Therefore, it can be concluded that this chapter showed that the observed marriage premium for men cannot only be explained by marriage. Rather it is explained by looking at individual, household and labour market characteristics that are significant in explaining the earning gap between those who are married and the unmarried.

The final chapter will conclude the study, while also giving recommendations for future research in this area.

Chapter 5: Conclusion and recommendations

The main purpose of this dissertation was to assess and analyse the impact of marital status on men and women's decisions to participate in the labour market, their employability and earnings in Lesotho. While, these relationships have been widely investigated in developed countries, there is more limited evidence in developing countries, and there are no existing studies which examine these issues in Lesotho.

The first objective of the study was to examine how economic theory accounts for possible differences in labour market outcomes on the basis of marital status. The study therefore began by reviewing existing theoretical and empirical literature on the effects of marital status on participation, employment and earnings for men and women. The literature reviewed the theory of labour participation and focused on the economic theory of marriage, gains to marriage, marriage market, and the effects of marital status on earnings for men and women. The theoretical literature reviewed here shows that people's decision to participate in the labour market is the outcome of a trade-off between time spent on work and consuming leisure. For women, time spent on home production also factors into this decision. The literature on marital status and its relationship to earnings argued that a combination of increased productivity, specialisation and discrimination contribute to the widely observed differentials in earnings among married and single men. With women, the theoretical direction of effect of marital status on earnings was more difficult to predict

The empirical literature reviewed studies from both developed and developing countries. The studies found marital status has a significant effect on labour market outcomes for both men and women. In particular, married men participate more in the labour market than unmarried men. With women, single women had the highest participation rates in most cases.

The study went on to attempt to test the applicability of these results to a developing country case, namely Lesotho. For the empirical analysis, the Integrated Labour Force Survey (ILFS) of May 2008 was used and the sample was restricted to individuals above the age 16 who were currently not students. The second objective of the study was to determine whether, on average, differences in labour market participation, employment and earnings exist between individuals with different marital statuses, and if so, whether these differences vary by gender. The descriptive statistics, which were separated by gender and marital status, the study found that the factors that determine labour market access may differ substantially by gender and marital status when looking at educational characteristics. The geographical distribution revealed that the sub-sample that was found most in the urban areas were the employed suggesting that in Lesotho living in an urban area is likely to guarantee an individual

employment. Lastly, the distribution of earnings showed that men are represented more than women in high paying earnings.

The final objective of the dissertation was to assess the extent of the differences in labour market outcomes by marital status persist, for both men and women, after controlling for observable characteristics and sample selection. This objective was met in Chapter 4 through the use of regression analysis, with the methodology used involving a three-phase procedure for selection in the labour market.

The labour force participation results showed that not all marital statuses are important in the determination of participation. Only being monogamously married, polygamously married or widowed were found to be important in determining participation for men and women. However, the effects of marital status work in opposite directions for the two genders: men in these categories are more likely to participate, while women are less likely to participate, than those who have never been married. These findings for Lesotho are in line with theory and findings elsewhere, in that married men tend to specialise in market work, while women tend to specialise in home production rather than participating in the labour market, (Becker, 1981; Korenman and Neumark, 1991).

The employment equation, without controlling for selection into participation, showed that majority of marital categories are insignificant in determining employment for both men and women. Men in monogamous marriages are the significantly more likely to be employed, whereas for women they are less likely to be employed is they are monogamously married or divorced. Again, however, the effects differ by gender: married men are more likely to be employed than those who have never been married, while the converse is true for women. The literature tends not to focus on this stage of the labour market process, as participation and employment are typically treated synonymously in developed country studies. However, this research has shown that marital status is an important correlate of employment for both genders.

The earnings analysis showed that important marital status indicators for men were monogamous and polygamous marriage, both of which raised earnings substantially, as well as being widowed, which reduced earnings somewhat. For women, the results revealed very modest relationships between earnings and marital status, with polygamously married women earning more and cohabiting women less than those who have never married, although not at high levels of significance.

When the sample selection estimation method was applied to the employment and earnings equations, it was observed that the error terms between the selection and main equations

were negatively and significantly correlated in both models. This finding supported that for South Africa (Bhorat and Leibbrandt, 2001). It is therefore important to control for non-random selection into labour market states, in order to prevent biased estimates. After controlling for selection, the effects of most of the covariates do not change very substantially. The largest changes were observed for the marital status indicators, and especially so for monogamous marriage and for women. After controlling for selection, women who are monogamously married are significantly more likely to be employed than women who have never been married, with the effect being even larger than for men. The literature has suggested that self-selection into labour force participation is non-random for women who are married, and these findings support this literature (Mincer, 1962 & Lee, 1997). Thus, after controlling for the type of women who selected themselves into participation, it does not appear that potential employers in Lesotho discriminated against hiring women who were married.

In the earnings equation, controlling for selection into participation and employment decreased the marital wage premium for men, but substantially increased it for women. Both men and women who were in either monogamous or polygamous marriages earned more than their never married counterparts. This supports the argument that increased productivity and specialisation in a marriage may enable individuals to earn more. Of particular interest is the fact that the marriage wage premiums are larger for polygamous marriage than for monogamous marriage for both genders, although especially so for men. Being able to distinguish between these two marriage types is one of the key advantages of using the Lesotho data set for such a study, in comparison to South African and other data. This finding supports the specialisation hypothesis, as both men and women who are polygamously married are likely to have other adults in the households with whom to share household duties. Similarly, employers may treat polygamous marriage as an indicator that an individual will be able to be particularly committed to their market work.

In summary, this dissertation gave a detailed understanding of the functioning of the labour market in Lesotho. It shed light on the impact of household, personal and occupational characteristics on participation, employment and earnings. It particularly showed that marital status plays an important role in explaining differences in labour market outcomes between individuals, and that being monogamously married is advantageous, most especially for men

However, despite these interesting findings, there are a number of limitations to the study. First, it is necessary to select variables to act as exclusion restrictions in order to use the Heckman selection method. The choice of such variables is limited by the data available. This study chose to follow the variables chosen by Bhorat and Leibbrandt (2001), using a similar data source for South Africa, in order to focus the research on the novel data and findings

rather than on the econometric issues related to exclusion restrictions. However, a more detailed study of such issues is an avenue for future exploration with these data. A second limitation to the study is that, since the data are cross-sectional, it is not possible to control for unobservable characteristics that may affect labour market outcomes. While the use of the Heckman selection model attempts to control for the factors that determine an individual's choice of labour market state, the outcomes are limited by the availability of variables to use as exclusion restrictions. If panel data were to be collected, this would allow for an improved method of control for unobservable characteristics. Another issue relating to an individual's choice of labour market state is that, especially for women, marital status and fertility are likely to be endogenous in labour force participation equations. That is, women may make decisions about when to have children and how many children to have in conjunction with their decisions about labour market participation, or in response to an inability to find work. This study has not attempted to control for this endogeneity, as doing so would require the identification of instruments for the presence or number of children. Nonetheless, it is important to acknowledge that the presence of such endogeneity may bias the results, especially for women who are married.

A final limitation with the interpretation of the results is in relation to the data set used. As much as the ILFS 2008 is appropriate for a study of the labour force or labour market related activities in Lesotho, the frequency of the survey is a challenge. For instance, the survey used is the most recent one conducted, and the previous survey was conducted in 1999. There is a substantial lag between data collection and the time it is released to the public, as well as these long lags between surveys. This may result in an out of date picture of the labour market. With regards to this particular study, the picture painted shows the situation in Lesotho in 2008. The country's economy was particularly hard-hit by the financial crisis, but the effects of this do not reflect in the current study. One of the recommendations of the research is therefore for the Bureau of Statistics Lesotho to conduct more regular surveys of the labour market.

There is much further research to be conducted in this area. In Lesotho, the culture of bridal fees is quite widely practiced. Future studies combining qualitative and quantitative research could analyse the effect of bridal price on marriage and men's decisions in the labour market. It would be of interest to look at the effect that bridal fees have on men's likelihood to work, their hours of work and whether they have increased productivity in order to enable them to marry, rather than marriage causing productivity to rise.

In summary, it is hoped that this study will spark interest in further labour market related studies in Lesotho. These studies have potential to explain various labour market characteristics, patterns, household behaviours and the overall performance of the labour force in Lesotho

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Appendix A: Labour force participation equations for men and women; T-tests

	Specification I		Specification II	
	Male	Women	Men	Women
Monogamously Married	0.293 (0.025)	-0.490*** (0.029)	0.246*** (0.037)	-0.436*** (0.036)
Polygamously Married	0.332 (0.141)	-0.509* (0.144)	0.504*** (0.161)	-0.507 (0.159)
Cohabiting	0.231 (0.261)	0.153 (0.247)	-0.035 (0.279)	-0.022 (0.278)
Separated	-0.036 (0.068)	0.129*** (0.062)	-0.004 (0.078)	0.098 *** (0.071)
Divorced	0.075 (0.161)	0.227*** (0.109)	0.118 (0.182)	0.171*** (0.124)
Widowed	-0.109 (0.061)	-0.327*** (0.036)	0.164** (0.074)	-0.098** (0.049)
Primary Education			0.244*** (0.034)	0.316*** (0.072)
Secondary Education			0.451*** (0.042)	0.517*** (0.074)
Tertiary Education			1.101*** (0.111)	1.672*** (0.119)
Age			0.105*** (0.007)	0.104*** (0.007)
Age squared			-0.002*** (0.000)	-0.001*** (0.0001)
Urban			0.714*** (0.037)	0.802*** (0.031)
No. children below 7			-0.077*** (0.01)	-0.099 (0.014)
No. children 8-14			-0.046*** (0.014)	-0.085 (0.014)
No. adults above 65			-0.134*** (0.028)	-0.094** (0.031)
No. other employed household members			0.168*** (0.017)	0.085** (0.016)
Other household income			-0.026** (0.011)	-0.027*** (0.008)
Other household income squared			0.001 (0.0001)	0.001*** (0.0002)
Household production			-0.547*** (0.027)	-0.627*** (0.031)
No. observations	11613	11893	11178	11511
Prob>chi2	0.000	0.000	0.000	0.000

Source: ILFS (2008).

Notes: The samples include all males and females aged 15-65 years. ***, **, and * indicate that the estimates for women differs from that for men at 0.01, 0.05 and 0.1 significance levels respectively.

Appendix B: Employment equations for men and women; T-test

	Specification I		Specification II	
	Men	Women	Men	Women
Monogamously married	0.408 (0.036)	-0.014*** (0.043)	0.203 (0.048)	-0.111*** (0.051)
Polygamously married	0.400 (0.197)	0.188 (0.255)	0.083 (0.221)	-0.035 (0.266)
Cohabiting	-0.102 (0.336)	0.181 (0.336)	-0.481 (0.354)	0.131 (0.369)
Separated	0.214 (0.105)	0.325*** (0.088)	0.125 (0.113)	0.187*** (0.098)
Divorced	0.671 (0.279)	-0.081*** (0.137)	0.489 (0.297)	-0.384*** (0.149)
Widowed	0.369 (0.1)	0.272*** (0.056)	0.191 (0.113)	-0.008*** (0.073)
Age			0.019 (0.010)	0.063*** (0.010)
Agesq			-0.0001 (0.0001)	-0.001*** (0.000)
Primary education			-0.069 (0.053)	0.046*** (0.138)
Secondary education			-0.034 (0.059)	0.246*** (0.140)
Tertiary education			0.781 (0.134)	1.032*** (0.170)
Urban area			0.219 (0.043)	-0.055*** (0.057)
Household production			-0.423 (0.038)	-0.515*** (0.045)
No.observations	6893	5380	6566	5046
Prob>chi2	0.000	0.000	0.000	0.000

Source: ILFS (2008).
Notes: The samples include all males and females aged 15-65 years. ***, **, and * indicate that the estimates for women differs from that for men at 0.01, 0.05 and 0.1 significance levels respectively.

Appendix C: Earnings equations for men and women; T-test

	Specification I		Specification II	
	Men	Women	Men	Women
Monogamously married	0.934 (0.035)	0.261*** (0.041)	0.271 (0.038)	0.044*** (0.033)
Polygamously married	1.203 (0.169)	0.346 (0.246)	0.489 (0.159)	0.414 (0.184)
Cohabiting	-0.099 (0.373)	-0.607 (0.307)	-0.243 (0.326)	-0.435 (0.212)
Separated	0.213 (0.096)	-0.018*** (0.075)	-0.049 (0.082)	-0.084*** (0.058)
Divorced	0.649 (0.213)	0.243** (0.139)	-0.156 (0.180)	0.050*** (0.106)
Widowed	0.695 (0.086)	-0.007*** (0.050)	0.172 (0.080)	-0.026*** (0.045)
Age			0.048 (0.008)	0.025** (0.007)
Age squared			-0.001 (0.0001)	-0.0003** (0.000)
Primary education			0.147 (0.041)	0.283*** (0.113)
Secondary education			0.391 (0.046)	0.489*** (0.115)
Tertiary education			1.069 (0.082)	1.189*** (0.127)
Urban area			-.060 (0.029)	0.092*** (0.027)
Experience			0.074 (0.048)	0.139*** (0.046)
Experience squared			0.013 (0.008)	-0.008*** (0.008)
Hours worked			0.011 (0.003)	0.018*** (0.003)
Hours worked squared			-0.0001 (0.000)	-0.0002*** (0.000)
Officials			0.366 (0.085)	0.701*** (0.096)
Professionals			0.665 (0.126)	1.001*** (0.095)
Technicians			0.133 (0.076)	0.460*** (0.056)
Clerks			0.097 (0.072)	0.293*** (0.049)
Sales			0.123 (0.058)	0.182*** (0.051)
Trade			-0.187 (0.165)	0.094 (0.153)
Craft			0.246	-0.149**

	Specification I		Specification II	
	Men	Women	Men	Women
			(0.035)	(0.051)
Machine			0.362	-0.038***
			(0.045)	(0.043)
Armed forces			0.499	0.760***
			(0.157)	(0.512)
Public sector			0.715	0.654***
			(0.055)	(0.049)
Private formal			0.746	0.470***
sector			(0.029)	(0.031)

Source: ILFS (2008).
Notes: The samples include all males and females aged 15-65 years. ***, **, and * indicate that the estimates for women differs from that for men at 0.01, 0.05 and 0.1 significance levels respectively.

UNIVERSITY OF
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22 October 2013

Ms Neo Matsoso 206520278
School of Accounting, Finance & Economics
Westville Campus

Dear Ms Matsoso

Protocol reference number: HSS/1215/013H
Project title: The effects of marital status on labour market participation, employment and wages in Lesotho

NO-RISK APPROVAL

In response to your application, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted FULL APPROVAL.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number. Please note: Research data should be securely stored in the discipline/department for a period of 5 years.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

.....

Dr Shenuka Singh (Chair)
Humanities & Social Science Research Ethics Committee

/pm

cc Supervisor: Dr Claire Vermaak
cc Academic Leader: Dr HPE Ngalawa
cc School Admin: Mr Sihle Khuzwayo/Ms Gina Mshengu