ATTITUDES TOWARDS MULTIPLE ROLE PLANNING (ATMRP) AMONGST ENGINEERING STUDENTS.

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COMPULSORY DECLARATION:

This work has not been previously submitted in whole, or in part, for the award of any degree. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work, or works of other people has been attributed, cited and referenced.

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ABSTRACT

This study examined attitudes toward multiple role planning (ATMRP) amongst engineering students in South Africa (N = 146). ATMRP is an individual's attitude or orientation toward planning for future involvement with work and family. Individuals with a more realistic attitude toward multiple role involvement are more likely to successfully manage a multiple role lifestyle. Exploratory factor analysis showed the multidimensionality of the ATMRP scale. The five dimensions were knowledge/certainty, commitment, independence, involvement and flexibility/compromise. The study examined the influence of cultural orientation i.e. gender role ideology, allocentrism and ideocentrism on their attitude toward planning for future work and family roles. Allocentrism explained a significant proportion of the variance in commitment, independence and flexibility. Ideocentrism and gender role ideology were not related to any of the five ATMRP dimensions. No gender differences across any of the five ATMRP dimensions were found. Limitations and suggested future research areas are presented.

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CHAPTER 1: INTRODUCTION

Over the past three decades the work-family interface has received growing attention as society's socio-structure continues to change (Brough & Kalliath, 2009; Greenhaus & Powell, 2006; Korabik, Lero, & Ayman, 2003; Powell, Francesco, & Ling, 2009; Weer, Greenhaus, Colakoglu, & Foley, 2006). Society has seen an increase in the participation of women in the workplace. Conventional gender roles of women as homemakers, and men as breadwinners, are no longer as apparent (Greenhaus & Sing, 2003; Weitzman, 1994). As the number of dual earner couple's increase (Kirrane & Monks, 2008), it becomes evident that both men and women independently need to take on both work and family responsibilities.

Work-family studies have adopted a conflict perspective that asserts the incompatible pressures of the combination of work and family roles (Greenhaus & Beutell, 1985). According to De Cieri, Holmes, Abbott, and Pettit (2005, p. 90) work-family balance is described as "the maintenance of a balance between responsibilities at work and at home". Although the involvement in multiple roles has an influence on work-life balance, owing to time and energy constraints (Greenhaus & Powell, 2006), individuals nonetheless aspire to achieve "having it all" (Greenhaus & Sing, 2003; Weitzman, 1994, p. 15). Individuals' attitudes toward multiple role planning are important as "having it all" is likely to produce conflict and strain, as role expectations in multiple domains are frequently incompatible. Pressures associated with the combination of work and family roles are, however, likely to be reduced should planning strategies be implemented (Weitzman, 1994).

This notion of "having it all" is recognised as achieving a balanced lifestyle through accomplishing both work and family aspirations, and doing so with ease (Keates, 1998). Young individuals have expectations and desires of a multiple role lifestyle and typically envision what the future holds for them (Peake & Harris, 2002). This view reflects the significance placed on both work and family domains, not only to individuals currently engaged in work and family roles but also to young men and women who aspire to establish a career, build a lasting relationship and consequently manage the two incompatible roles successfully (Barnett, Gareis, James, & Steele, 2003).

As affirmed by Barnett et al. (2003) and Weitzman (1994), over the years, as the desire to "have it all" became more prominent in society, the task of managing multiple roles has become more complex and overwhelming. Young individuals are increasingly faced with the difficult task of making suitable decisions, such as educational plans, which will impact on their career paths (Battle & Wigfield, 2003), in order to achieve particular goals. These decisons will accordingly affect both work and family spheres dependent on choices made in view of future career commitments and the importance that work-family balance will play in the future (Grant, Ward, Brown, & Moore, 1987). These decisions are typically complex and due to their enduring consequences deserve attention.

Expectations, such as values held by a society, are the most defining characteristic of a culture (Rokeach, 1979). Values serve as the standard to which individuals assess and identify behaviours and events during multiple domains of life (George & Jones, 1996). The values of a society are for that reason pivotal in shaping young adults' attitudes towards the work and family realm.

Cinamon (2006) asserted that individuals are predisposed to learning and socialisation from their family members, which accounts for the conditioning of an individual's cultural orientation. Societal values in addition to the values of families, friends and partners, will influence the development of multiple role planning. Specifically, the values that families embrace will emerge in the conditioning that occurs regarding the perception of work and family (George & Jones, 1996). The involvement of work-family roles will thus be influenced by the values and behaviours firmly set in place by society. Hargrove, Inman, and Crane (2005) emphasised that the family environment and the quality of family relationships, whereby family are encouraged to share thoughts and problems, will assist young individuals in predicting individual career planning attitudes. Prenda and Lachman (2001) also found that social support from family members and friends, relates significantly with an individual's planning style, characterised by either a planful or non-planful orientation (Weitzman, 1994). Increased social support has been found to increase future oriented planning considered by young men and women.

Young individuals are faced with significant choices as they plan for the successful combination of multiple roles (Spade & Reese, 1991). As these changes in workplace demographics and family

structures become the norm in many industrialised societies, it becomes necessary to understand what influences young men and women's attitudes towards planning for multiple role engagement. Therefore, planning may provide individuals with direction and insight and serve as a coping mechanism in dealing with ambiguous future role demands, opportunities, and stresses associated with simultaneous demands of the work and family domains (Aryee & Debrah, 1993).

According to Greenhaus and Beutell (1985, p. 77) work-family conflict is defined as "a form of inter-role conflict in which the role pressures from the work and family domains are mutually incompatible. That is, participation in the work (family) role is made more difficult by virtue of participation in the family (work) role". Greenhaus and Sing (2003) asserted that if not managed proficiently, work-family conflict is likely to have a damaging effect on multiple spheres of life. It is evident that development and implementation of efficient planning to ease work-family stress is necessary. Being aware of the influences on work and family will assist individuals to establish effectual planning strategies to minimise work-family conflict and thus achieve the widespread desired notion of "having it all".

To this end, this study will focus specifically on students studying towards a tertiary qualification in Engineering and cognate fields of study. Students' attitudes towards planning for multiple role occupancy will have an influence on the quality of involvement and accomplishment experienced from a multiple role lifestyle (Weitzman, 1994). These students specifically experience unique working conditions. Engineers typically work in diverse environments; from an office environment, a laboratory setting, a construction site, and an oil or gas production plant, to an industrial plant. Extensive travel is often required across varying locations. Although work hours are generally a regular 40-hour work week, deadlines or design standards are likely to add additional time and energy demands (Bureau of Labor Statistics, 2011). These work conditions are anticipated to have an influence on the attainment of the successful combination of multiple roles. Work-life balance is likely to be affected causing work-family conflict. The career choice, specifically for young females, is important as the engineering field is typically viewed as a traditional occupation that is predominantly male. There is, however, an increase of females entering the respective workforce although they are still under-represented (Frehill, 2011; Matyas, 1992). It is important that these individuals be aware of the difficulties they may face in the

engineering environment and how they plan to cope with these difficulties in order to manage a multiple role lifestyle.

Purpose and Scope

In light of the above argument, this study contributes to limited research on the attitudes of engineering students towards planning for multiple roles. Additionally, the study aims to examine the influence that an individual's cultural orientation, specifically their gender role ideology, ideocentric and allocentric orientation, has on an individual's attitude towards planning for work and family role occupancy. Although young individuals anticipate having an involvement in multiple roles, little is known about their attitudes towards planning for such involvement. The findings of this study will contribute to a more complete understanding of the attitudes of engineering students towards planning for future roles and provide an awareness in order to consider suitable planning strategies, with the final result of achieving the desired notion of successfully balancing the combination of work and family and "having it all'.

Structure of the Dissertation

Following this introduction, which provides the preface and aim of the study, Chapter 2 outlines the theoretical framework that underpins the constructs being investigated, and a comprehensive review of the available literature. Chapter 3 describes the research design, the participants, the data collection method, the measuring instruments and the statistical techniques used to meet the purpose of the study, while Chapter 4 reports on the research results found from the statistical analysis. Chapter 5 subsequently discusses the findings of the research results and provides limitations, contributions and suggestions for future research.

Research Question

The research question posed in this study is: What is the nature of attitudes towards multiple role planning (ATMRP) and its relationship to gender role ideology, ideocentrism and allocentrism amongst engineering students in South Africa?

CHAPTER 2: LITERATURE REVIEW

This chapter presents a review of the literature of the topic. Firstly, a literature search and a theoretical framework will be presented followed by the constructs under question. A review of the literature examining the relationships between the various constructs will be provided.

Literature Search

The availability of work-family literature is growing exponentially but only limited research on individuals' attitudes toward planning for the combination of work and family roles has been found. In 1970 a search conducted by Pitt-Catsouphes, Kossek, and Sweet (2006) revealed less than 500 published studies on the work-family interface. A search conducted on EBSCOhost in April 2011 found studies on work-family had augmented to over 24 000 peer reviewed articles. A combination of keywords were used in the online search which comprised of "work and family", "work life balance", "work-family conflict", "multiple roles" and "family and career". "Work-family" appears to be the predominant term used in early and current literature.

A search conducted on EBSCOhost and Google Scholar in October 2011 found only eight articles examining the construct ATMRP. No research from South Africa was found. These studies are outlined in Table 1.

ATMRP is an individual's attitude or orientation toward planning for the involvement of work and family domains. Individuals may hold more realistic or unrealistic attitudes toward multiple role involvement. These attitudes will have an effect on the attainment and successful composition of a multiple role lifestyle (Weitzman, 1994).

Table 1

Empirical Research of ATMRP

Studies	*Sample*	*Country*	*ATMRP Scale Used*	*Relevant Findings*
PUBLISHED STUDIES				
Weitzman (1994)	Theoretical paper	United States of America		The Multiple Role Realism (MRR) model / theoretical framework was developed.
Weitzman and Fitzgerald (1996)	925 female students (177 high school, 394 undergraduate and 354 graduate participants)	United States of America	Development and validation of ATMRP scale	The development and initial validation of scales to assess ATMRP.
McCracken and Weitzman (1997)	131 college female participants	United States of America	Yes 4 of the 5 subscales (excluding; flexibility/compromise)	Personal agency was positively related to the ATMRP subscales of knowledge/certainty and commitment to multiple roles. Problem-solving appraisal factors were positively related to knowledge/certainty. Educational level influenced the ATMRP subscale of involvement.
Peake and Harris (2002)	132 college students (66 female and 66 male participants)	United States of America	Yes 4 of the 5 subscales (excluding; flexibility/compromise)	Marriage plans related positively to knowledge/certainty about multiple role planning. Gender and career traditionally affected marriage plans in its influence on commitment to and involvement in multiple roles. ATMRP mediated the association between marriage plans and planning activity for work–family balance.

Vigil, Ballif-Spanvill and Nichols (2003)	149 college female participants	United States of America	19 items were adapted from the ATMRP scale for the development of the LOS Decision Making (LDSDM) scale	Lack of confidence in planning for multiple roles affected decision making. Significant differences in decision making were found between women in different academic fields.
UNPUBLISHED STUDIES				
Keates (1998)	261 participants (172 female and 89 male participants)	Canada	Yes 4 of the 5 subscales (excluding; flexibility/compromise)	Women's involvement in planning was positively related to the number of strategies produced for dealing with multiple roles. Men with greater knowledge of planning and involvement experienced traditional attitudes towards women. Multiple role planning is different across genders.
Booth (2005)	262 female participants (163 African-American and 99 White females)	United States of America	Yes 4 of the 5 subscales (excluding; flexibility/compromise)	ATMRP did not predict career choice. ATMRP predicted career motivation. Racial and gender differences were observed in career motivation and certain ATMRP subscales.
Ganginis (2008)	325 female participants	United States of America	ATMRP scale adapted for the development of the Planning for Career and Family scale	The Planning for Career and Family Scale was developed.

Theoretical Framework

ATMRP is understood in the context of role theory. The combination of a multiple role lifestyle based on role theory is understood as "strategies an individual uses to manage the joint enactment of work and family roles" (Kossek, Noe, & DeMarr, 1999, p. 105). Individuals' strategies for the composition of multiple roles, in light of personal circumstances, are taken into account. Role theory traditionally focuses on the nature of role conflict and asserts that intra-role conflict (within a role) and inter-role conflict (within multiple roles) are likely to cause undesirable states since demands from one role are incompatible with demands produced by a different role, and are likely to interfere with the other (Barnett & Gareis, 2006; Voydanoff, 1993).

According to Goode (1960) individuals who engaged in multiple roles are more likely to be faced with conflicts due to resource constraints. Since individuals are faced with limited physical and psychological resources, conflicting demands arise around the combination of multiple roles (Greenhaus & Beutell, 1985). Similarly, Roehling, Roehling, and Moen (2001) asserted that expectations related to the attainment of work and family roles often lead to strain within and between domains and thus produce inter-role conflict. Aspirations to acquire a balanced lifestyle will result in time and energy being divided between the two conflicting roles. Roles consequently compete for resources and result in conflict as the desire to manage multiple roles is likely to initiate work overload within domains. Cinamon (2006) affirmed that an understanding of attitudes and expectations toward multiple role involvement is likely to encourage planning interventions and so reduce conflict caused by incompatible pressures. This gives rise to the construct attitudes towards multiple role planning.

Multiple Role Realism (MRR)

ATMRP is a construct that forms part of the broader framework of multiple role realism (MMR). MRR is the awareness that the combination of multiple roles is a complex way of life which is likely to disrupt an individual's work-life balance. MRR is characterised by the understanding that careful planning is required in order to combine multiple roles. It is proposed that an

individual's orientation toward planning for multiple roles is likely to influence any future fulfillment, or the work-life conflict associated with the combination of these roles. The proposition of MRR takes into account that societal influences are likely to have an effect on the planning process, and are expected to play a role on the type of plans considered (Weitzman, 1994).

MMR has a number of theoretical underpinnings based on the career maturity model hypothesised by Crites (1978). This work was originally based on Super's (1957) career development theory. Career maturity is the extent to which suitable work related tasks that are relevant to the individuals' age have been developed (Betz, 1988). Crites (1978) affirmed that career maturity is vital as unfavourable career decisions are otherwise likely to be made. According to Super (1957) and Crites (1978) a career mature individual will gather information and gain knowledge in order to make informed decisions. Since career maturity, and as well as MRR, typically increase with age (Betz, 1988; Weitzman, 1994), students' attitudes toward planning for multiple roles are likely to still be emerging.

MRR has three distinct components namely: multiple role knowledge (MRK); multiple role planning (MRP); and attitudes toward multiple role planning (ATMRP) (refer to Figure 1).

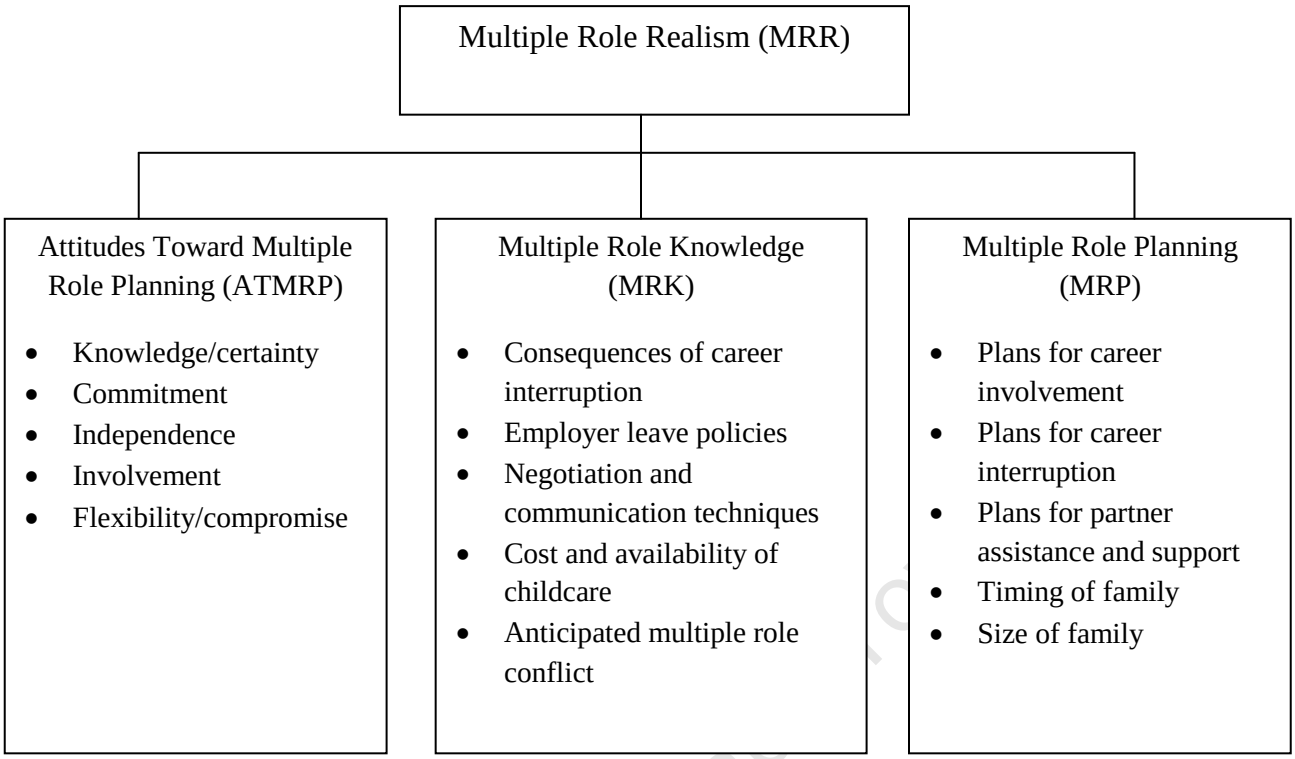

Figure 1. *Multiple Role Realism (MRR) and the Construct's Distinct Components*

Multiple Role Knowledge (MRK)

Multiple role knowledge (MRK) requires concrete information pertaining to specific concerns of combining work and family domains. Knowledge, such as anticipated work family conflict, communication skills required between the individual and their potential partner, an appreciation for the consequences of future career interruptions as well as the cost and availability of prospective childcare, is vital in the MRR model. Evidence has been found demonstrating the lack of knowledge in the respective field (Weitzman, 1994).

Multiple Role Planning (MRP)

Multiple role planning (MRP), as described by Booth (2005), is the notion that individuals anticipate the involvement and combination of work and family, and prepare for this involvement accordingly. Similarly, Weitzman (1994) asserted that MRP is the extent to which multiple roles have been engaged in. These plans comprise of plans related to anticipated career

involvement and future career interruptions, plans related to support from the individual's partner as well as plans concerning the anticipated timing and size of a family.

Attitudes Towards Multiple Role Planning (ATMRP)

ATMRP, as a concept, is an individual's attitude or orientation toward planning for the involvement of work and family domains. Individuals may hold both realistic and unrealistic attitudes toward multiple role involvement. These attitudes will have an effect on the attainment and successful composition of multiple roles (Weitzman, 1994).

Although individuals desire the attainment of success in both work and family roles, the aspiration to "have it all" is associated with the confusion of how to integrate these roles. The involvement in conflicting roles is likely to produce multiple role pressures as well as anticipated work-family conflict (Greenhaus & Beutell, 1985; Weitzman, 1994). The planning process around work and family involvement is challenging yet equally salient in order to successfully be involved in a combination of multiple spheres (Grant et al., 1987). Awareness of these attitudes and of the need for careful planning is vital.

Five specific attitudes toward multiple role planning are identified: (1) knowledge/certainty, (2) commitment (3) independence (4) involvement and (5) flexibility/compromise.

Knowledge/certainty

Knowledge/certainty assesses an individual's understanding about preparing for work and family involvement and the certainty regarding an individual's ability to plan and manage the obligations of a multiple role lifestyle (Weitzman, 1994).

It has been found that young men and women do not have sufficient knowledge or the understanding of specific strategies for the combination of managing multiple role involvement. Individuals are aware of the desire to "have it all" yet they are not clear on what approach to use in order to achieve the integration and successful attainment of multiple roles (Peake & Harris,

2002; Weitzman, 1994). Weitzman (1994) asserted that the quality of planning for multiple roles will significantly affect the accomplishment and experience thereof. Planning is likely to play a significant role in influencing the eminence of an individual's work-family life.

Commitment

Weitzman (1994) describes commitment as evaluating an individual's dedication and engagement to multiple roles, and their attitudes towards the involvement of multiple roles. An individual's attitude of commitment affirms their desire to "having it all" and balancing multiple roles in order to attain a multiple role lifestyle.

Prior to making a decision to plan for the combination of multiple roles, commitment and desire needs be present. Steffy and Jones (1988) affirmed that individuals who display clearly developed desires and goals during the process of planning for multiple roles are more committed and involved in these roles.

Independence

Independence affirms the value individuals place on themselves with regard to making personal decisions autonomously and planning accordingly. Independence displayed by individuals involves their attitudes towards the participation and opinions of others, such as family and friends, in making decisions about work and family domains, and thus managing these responsibilities utilising those viewpoints (Weitzman, 1994).

According to Peake and Harris (2002) the more independence that is displayed by an individual the greater their need to make autonomous decisions, as opposed to being reliant on advice from family and friends.

Involvement

Involvement is related to the participation and level of involvement in making plans around both work and family spheres and the degree of immersion and interest in planning for these roles (Peake & Harris, 2002; Weitzman, 1994).

Grant et al. (1987) found that expectations regarding family involvement and support are created before young men and women enter tertiary education. Weitzman (1994) asserted that planning is vital in order for young individuals to ultimately manage and be involved in both work and family domains.

Flexibility/compromise

Weitzman (1994) referred to flexibility/compromise as the level of compromise individuals are willing to consider when they decide on how to manage multiple role responsibilities as well as attitudes they held in developing flexible plans, when preparing for multiple roles.

Planning is characterised by the consideration of numerous strategies and the existence of contingency plans. Flexibility/compromise is required in order for multiple roles to be managed effectively in the event of possible conflicts. Career or family altering strategies, such as those that ensure that the career or family role do not drastically interfere with the supplementary domain, should be available and could be considered (Greenhaus & Parasuraman, 1994). Career altering strategies can include the selection of occupations with flexible work hours, or the selection of more traditional careers. Baber and Monaghan (1988) affirmed that the planning for family roles is difficult to anticipate. Individuals who intend to enter non-traditional careers are more likely to expect the delay of starting a family, or are likely to consider a reduced family size.

Weitzman and Fitzgerald (1996) found adequate reliability for four of five ATRMP dimensions/subscales. *1) Knowledge/certainty subscale:* five items from the Weitzmen (1994) scale were used for this subscale. The full 10 item sub-scale found a Cronbach alpha of .83. A

sample item is "I don't know how to plan for combining my career and my family". 2) *Commitment subscale:* five items were used for this subscale. The full 10-item sub-scale found a Cronbach alpha of .79 with a sample item stating "I am committed to having a lifelong career in addition to raising a family". 3) *Independence subscale:* five items were used for this subscale. The full 10-item sub-scale found a Cronbach alpha of .80. A sample item is "I plan to look to my friends and family for suggestions about balancing my career with my parenting responsibilities". 4) *Involvement subscale:* five items were used for this subscale. The full 10-item sub-scale found a Cronbach alpha of .84. A sample item is "there is no point in trying to decide how to deal with the demands of a career and a family when the future is so uncertain". 5) *Flexibility/compromise subscale:* five items were used for this subscale. The full 10-item sub-scale found a Cronbach alpha of .68 with a sample item stating "when deciding how to manage your career and family responsibilities, it's important to come up with flexible plans".

Although Weitzman and Fitzgerald (1996) stated that the subscale did not demonstrate sufficient reliability and validity and may be eliminated from the scale or used experimentally, the flexibility/compromise subscale was included in this study. The Cronbach alpha of .68 found by Weitzman and Fitzgerald (1996) was deemed satisfactory considering that an alpha value of .70 was deemed an acceptable level of reliability (Hair, Babin, Money, & Samouel, 2003).

The ATMRP scale comprised of positively and negatively worded items. The scale consisted of 13 negatively worded items. These items were reverse scored according to the 5-point Likert scale; for example a response of 1 was reverse scored as 5 and a response of 5 was reverse scored 1. While higher scores indicated a realistic or planful orientation, lower scores indicted unrealistic and non-planful attitudes toward planning for a multiple roles lifestyle.

In summary, Weitzman (1994) acknowledged that there is value in thoughtful and realistic planning, although individuals do not always develop plans to assist with the combination of work and family roles. An awareness of individuals' attitudes towards planning for multiple roles is the initial step in establishing a plan to achieve the successful combination of multiple roles.

Cultural Factors Influencing Attitudes Towards Multiple Role Planning (ATMRP)

Korabik et al. (2003) argued that it is important to acknowledge the influences of culture on the work-family interface. Work and family roles can differ in levels of importance across cultures and therefore the consideration of the cultural context is deemed important (Masuda, Poelmans, Spector, & Allen, 2008).

Korabik et al. (2003) asserted that there has been an increase in research that considers the influence of culture on the work-family relationship. Culture forms the base of an individual's social reality and is characterised by a collective set of knowledge and inherent theories about the society and the world as a whole comprising of beliefs, values, attitudes, and behaviours (Hong, Morris, Chiu, & Benet-Martínez, 2000). Culture is "not directly accessible to observation but inferable from verbal statements and other behaviors and useful in predicting still other observable and measurable verbal and nonverbal behaviour" (Hofstede, 1993, p. 89). An individual's cultural orientation is said to affect their beliefs and values of a desirable or undesirable way of life.

Similarly Weitzman (1994) stated that the consideration and development of multiple role plans is influenced by the personal differences of individuals as well as their values, beliefs and aspirations. Cultural orientations are understood to influence the behaviour of individuals (Brown, 2002), as individuals have different values and attitudes based on their cultural views.

Three factors assumed to influence individuals' ATMRP are identified and will be under investigation in this study: gender role ideology, ideocentrism, and allocentrism. Since Powell et al. (2009) suggested that the dimensions of masculinity/femininity (gender role ideology) and individualism/collectivism (ideocentrism/allocentrism) were most relevant to the work-family relationship; this study will focus on these cultural dimensions. No empirical studies were found on the relationship between these cultural dimensions and ATMRP, therefore literature on other work-family constructs and cultural orientations have been reviewed.

Gender Role Ideology

Gender role ideology refers to individuals' opinions and beliefs concerning the most suitable roles for men and women (Harris & Firestone, 1998). Gender roles are one-dimensional and expressed on a continuum from traditional to egalitarian. Traditional gender roles support traditionally anticipated distinctions in roles for men and women. Traditional men and women hold attitudes that a women's principal role is in the home. Individuals that hold egalitarian gender views conversely do not support the isolation of roles by gender but embrace that male and female work and family roles be equal (Lachman, 1991).

The gender role theory proposes that females identify more strongly with the home role than do their male counterparts (Gutek, Searle, & Klepa, 1991). Gender role ideology is seen as the belief held by individuals and how strongly individuals accept appropriate and suitable roles that men and women hold in the home and in the workplace (Fortin, 2005). According to Eagly (1987) gender role orientations are created and strengthened on experiences and observations from an early age. Gender role ideology is, however, likely to change should individuals be exposed to different societal norms and values.

Kirrane and Monks (2008) shed light on the traditional views whereby women are primarily involved in the role of a caregiver whereas men take on the role of the financial provider. With an increased number of dual career couples, the traditional notion may for some individuals not be as apparent. Individuals in relationships are taking on more egalitarian views whereby men are no longer seen as the primary breadwinner and that both men and women take on shared responsibilities in the home and at work. As a result, traditional gender orientations are increasingly being challenged as more women enter the workforce.

According to Davis and Greenstein (2009) individuals are likely to make decisions and plans according to their views of gender role, decisions such as the timing of a family, and choice of career. It has been found that work and family domains are consequently viewed differently by individuals due to either traditional or egalitarian gender role orientations. Values and beliefs regarding family and career roles of men and women are affected as a result (Fulcher & Coyle,

2011). The traditional role ideology displays males assuming assertive roles while females adopt more nurturing behaviours (Saez, Casado, & Wade, 2009). The egalitarian ideology, on the other hand, is characterised by men and women sharing equal responsibilities in the work and family domains (Fulcher & Coyle, 2011).

Spade and Reese (1991) established that men do not consider household activities to be a necessary task for the male and thus displayed more traditional gender role orientations concerning the work-family interface. Further research studies have demonstrated that males and females are likely to accept more egalitarian gender roles for both men and women should conflicts arise while attempting to achieve work-family balance (Grant et al., 1987; Spade & Reese, 1991).

According to Wu and Durden (2006) individuals are expected to experience conflict should their gender views (either traditional or egalitarian) not be supported by values and norms of their society or group. It is therefore necessary to determine if an individual's gender role ideology has an influence on their attitudes toward the combination of multiple roles, as this in itself is likely to produce incompatible pressures.

Ideocentrism / Allocentrism

Ideocentrism and allocentrism have been named by Triandis (2004) in order to describe the individual level of analysis for individualism and collectivism respectively. Hofstede (1984) declared that individualism is characterised by individuals who are concerned mostly for themselves and their own wellbeing in addition to their immediate family. Collectivist cultures on the other hand view the groups' goals as priority and the collective is a tightly knit group. Similarly, Triandis (2004) asserted that on an individual level of analysis, ideocentrism is characterised by independence, focusing on individual aspirations, attitudes and desires. Allocentrism is, on the other hand, characterised as interdependence amongst people, focusing on shared aspirations, norms and responsibilities and focuses on upholding relationships.

Oyserman, Kemmelmeier, and Coon (2002, p. 114) affirmed that an individual level of analysis, opposed to a national cultural level of analysis, proposes that "part of what culture is can be found at the individual level as articulated mental representations. These approaches treat culture as a set of internalised values, attitudes, scripts and norms that are likely to influence cognition, affect, and motivation in meaningful ways". Matsumoto (2003) stated that it is essential to assess a cultural individual level of analysis by using only individual level constructs such as self construal. Self construal relates to an individual level cultural orientation and is not able to be used at a national or macro level. National level cultural analysis is likely to include a sample item such as ''competition is the law of nature'' while an individual level of analysis sample item is ''I usually sacrifice my self-interest for the benefit of my group'' (Sivadas, Bruvold, & Nelson, 2008, p. 207).

Table 2 illustrates the varying terms used by researchers for ideocentrism / allocentrism across studies as well as the level of analysis utilised.

Table 2

Terms Used for Ideocentrism / Allocentrism Across Studies

Researcher	*Term*
National Level of Analysis	
Hofeste (1980)	Individualism / Collectivism
Bond (2002)	Individualism / Collectivism
Oyserman et al. (2002)	Individualism / Collectivism
Sivadas et al. (2008)	Individualism / Collectivism (Horizontal and Vertical dimensions)
Individual Level of Analysis	
Triandis, Leung, Villareal, and Clack (1985)	Ideocentrism / Allocentrism
Singelis (1994)	Independence / Interdependence
Triandis and Gelfand (1998)	Individualism / Collectivism (Horizontal and Vertical dimensions)
Sharma (2010)	Independence / Interdependence
Multi-Level of Analysis	
Markus and Kitayama (1991)	Independence / Interdependence
Steel and Taras (2010)	Individualism / Collectivism

Singelis (1994) found that ideocentrism (termed as independence) and allocentrism (termed as interdependence) as cultural dimensions, on an individual level, revealed the interrelated qualities to Hofstede's individualism/collectivism dimensions. Sharma (2010) also conducted research on an individual level of analysis whereby ideocentrism (termed as independence) and allocentrism (termed as interdependence) were identified as relating to Hofstede's individualism and collectivism cultural paradigm dimensions. Sharma (2010, p. 790) defined the dimensions of ideocentrism (independence) as "a personal cultural orientation associated with acting independently, a strong self-concept, a sense of freedom, autonomy, and personal achievement". Allocentrism (interdependence), on the other hand, is characterised as "a personal cultural

orientation associated with acting as a part of one or more in-groups, a strong group identity, a sense of belongingness, reliance on others, giving importance to group-goals over own individual goals, and collective achievement". According to Oyserman et al. (2002) ideocentrism concentrates on the autonomous individual whereas allocentrism on an individual's responsibility and commitment to a group.

Triandis and Gelfand (1998) stated that ideocentrism (termed as independence) and allocentrism (termed as interdependence) may be horizontally or vertically orientated, underlining equality or a chain of command, respectively. This distinction is feasible and significant. "Horizontal patterns assume that one self is more or less like every other self. By contrast, vertical patterns consist of hierarchies, and one self is different from other selves" (Traindis & Gelfand, 1998, p. 119).

The society people live in typically influences their cultural orienation as well as personal choices and values, and so their quality of life is culturally dependent and the connotation placed on the quality of life is affected (Hofstede, 1984). Steel and Taras (2010) stated that micro-level constructs of age, gender, educational level and socio-economic status, in addition to macro-level constructs which include autonomy and wealth, may possibly result in a particular cultural orientation taken on by individuals.

Ideocentic individuals are seen as being more analytical whereas individuals with an allocentric orientation percieve their reality more holistically (Steel & Taras, 2010). Allocentric orientated individuals have been found to show greater concern pertaining to the value placed on work-family domains. This is due to their sense of connectedness and thus is vital since these individuals participation in work roles influences the quality of the family domain and vice versa (Powell et al., 2009). Allocentric orientated individuals are moreover likely to display loyalty to an organisation, irrespective of an individual's satisfaction level (Brough & Kalliath, 2009; Powell et al., 2009).

Since Masuda et al. (2008) argued that work and family roles differ in levels of importance across cultures, and Powell et al. (2009) suggested that ideocentrism/allocentrism were relevant

to the work-family interface, individuals' attitudes towards planning toward multiple role involvement are likely to be affected.

Gender Differences Across Attitudes Toward Multiple Role Planning (ATMRP)

Gender will additionally be considered to determine if there are any differences in men and women's attitudes towards planning for a multiple role lifestyle. A number of studies, specifically conducted in the United States of America, have focused on the effects of gender on multiple roles. Men and women alike are faced with the challenging task of planning for the combination of work and family in order to "have it all" (Greenhaus & Sing, 2003; Weitzman, 1994). Spade and Reese (1991) exhibited the notion that both men and women see the significance of multiple roles, and intend on being involved in both work and family spheres (Barnett et al., 2003). Differences in the effects of gender have accordingly been highlighted (Cinamon, 2006).

Spade and Reese (1991) found that gender played no significance with regard to the importance of work and family roles. They found that both men and women are equally committed to family roles and work involvement and both expressed an interest in the postponement of the start of a family until later in life once their careers have been established. Correspondingly, Barnett et al. (2003) found that men and women may experience equal amounts of work-family conflict. However, some studies have demonstrated the contrary. According to Cinamon (2006) higher levels of conflict are anticipated by young women, than men. Similarly, research by Weitzman (1994) established that young women anticipate the participation of work and family more so than their male counterparts.

Peake and Harris (2002) also found that young men and women have different expectations concerning multiple roles across gender. Spade and Reese (1991) proposed that although gender has been found in various studies to not affect work-family involvement, it has been established that gender plays an influence on the anticipation of multiple roles. Females perceived themselves as less able to fulfil multiple roles compared to males, but perceived their ability more negatively. Women were, however, more likely to anticipate the combination of work and

family roles whereas men expected to hold more traditional roles. Additionally, women were found to anticipate the involvement of multiple roles slightly earlier than their male counterparts and furthermore anticipated the combination of work and family, whereas males were unsure of the future involvement of multiple roles of their partner (Cinamon, 2006).

According to Burack and Lachman (1996) and Prenda and Lachman (2001) women are more likely to plan for short-term roles and responsibilities while men are more focused on planning for the future. Although it has been established that men hold higher career aspirations when compared to women, career altering strategies are more likey to be employed by women (Weer et al., 2006). Hargrove et al. (2005) stated that young women seem to acquire more information and get more involved in planning for their careers than their male counterparts. Due to the varied findings across studies, the current study will examine the role gender plays on individuals' attitudes towards planning for multiple role occupancy.

Propositions

The objective of this study is to investigate the nature of attitudes towards multiple role planning (ATMRP) and its relationship between gender role ideology, ideocentrism and allocentrism of engineering students and differences across gender. On the basis of the literature reviewed, the following propositions were developed.

Proposition 1: ATMRP has five dimensions.

Proposition 2: Gender role ideology (GRI) will explain a significant portion of the variance in ATMRP, over and above the variance explained by certain control factors.

Proposition 3: Ideocentrism will explain a significant portion of the variance in each of the ATMRP dimensions, over and above the variance explained by certain control factors.

Proposition 4: Allocentrism will explain a significant portion of the variance in each of the ATMRP dimensions, over and above the variance explained by certain control factors.

Proposition 5: There are differences in the dimensions of ATMRP across gender.

Chapter Summary

Because the integration of potentially conflicting work and family roles poses a predicament for many individuals (Baber & Monaghan, 1988), and negotiating multiple role involvement is challenging (Weitzman & Fitzgerald, 1996) it is of importance and deserves attention. As demonstrated, individuals who develop explicit goals while planning for multiple roles are more committed to and involved in these roles (Steffy & Jones, 1988) and will experience a more balanced work life. Weitzman (1994) acknowledged that there is value in thoughtful planning, although many individuals do not develop particular plans to assist with the combination of multiple roles. It is therefore important to determine an individual's attitude towards planning for multiple role occupancy in order to ensure the notion of "having it all" is attainable with reduced resistance.

CHAPTER 3: METHODS

This chapter describes the research design, the participants involved in the study, the data collection procedure, the scales used to measure the variables and the data analysis techniques used.

Research Design

This quantitative study adopted a cross-sectional, descriptive design in which the constructs were described and the relationship between them determined at a particular point in time. The design was selected because it enabled the testing of the propositions and the successful completion of the study within given time constraints and with the available resources (Terre Blanche, Durrheim, & Painter, 2006).

Participants

The participants of this study were university students studying toward a tertiary qualification in Engineering and cognate fields of study. The survey was made available to 1327 engineering students (N = 146; response rate = 11%).

Engineering students were selected because they are likely to expect that an engineering career will be characterised by demanding work conditions (Bureau of Labor Statistics, 2011), with little time to devote to balancing work and family roles. Most participants were male (73%). The mean age of the participants was 21 years *(SD = 2.00).* Most (81%) stated that they planned to marry, 12% were unsure about getting married, 4% stated they did not plan to marry and 3% stated that the question was not applicable to them. Most of the participants planned to have children (75%), 16% were undecided, 5% did not plan to have children and 3% (a total of 4) were already parents. These parents were included in the sample because they were not involved in a full-time work role and therefore still met the criteria that participants not have both work and family roles.

Table 3 illustrates the demographic characteristics of the sample.

Table 3
Demographic Characteristics of the Sample

Demographic	*Category*	*Frequency*	*%*
Gender	Male	107	73%
	Female	39	27%
Race	African	57	39%
	White	48	33%
	Indian	20	14%
	Asian	7	5%
	Coloured	6	5%
	Preferred not to indicate race	5	4%
Area of study	Electrical Engineering	51	35%
	Civil Engineering	44	30%
	Property Studies	28	19%
	Chemical Engineering	13	9%
	Unidentified Engineering Qualification	8	6%
	Architecture	2	1%

Procedure

Data was collected via a self-administered survey, following ethical clearance for the study from the University of Cape Town's Commerce Faculty Research Ethics Committee. Permission for gaining access to participants was granted from the respective tertiary institution's Student Affairs Director. Given time and cost constraints, non-probability convenience sampling was employed as a means of generating an appropriate sample (Neuman, 2000).

A pilot study was conducted with a group of students (N = 110) who completed all the survey items and discussed their experience of completing the survey. The participants who completed the pilot survey did not raise any problems regarding the items or the instructions on the survey questionnaire (See Appendix A).

Following the pilot study an email request and reminder was sent out to all the engineering students at the university. The email contained a link to an online survey which was hosted on the university network. A cover letter provided each participant with specific information regarding the purpose of the study, instructions on how to complete the survey, the voluntary nature of participation, and confidentiality of the responses. The survey was open for completion for 10 days. The survey took approximately 10 minutes to complete (See Appendix B for the full instrument).

Measures

Attitudes Toward Multiple Role Planning (ATMRP). Five items from each of the five dimensions of the ATMRP scale developed by Weitzman and Fitzgerald (1996) were used. Items were measured on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores indicate a more planful orientation towards multiple roles.

Gender Role Ideology. Judge and Livingston's (2008) 5-item gender role ideology scale was used to measure support for traditional (as opposed to egalitarian) gender role behaviour. Items were measured on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The items were "a woman's place is in the home, not the office or shop"; "a wife with a family has no time for outside employment"; "employment of wives leads to more juvenile delinquency"; "it is much better if the man is the achiever outside the home and the woman takes care of the home and family"; and "women are much happier if they stay home and take care of children" (Judge & Livingson, 2008, p. 1000). Judge and Livington (2008) reported a high Cronbach alpha of .78 for this scale.

Ideocentrism / Allocentrism. The scale developed by Sivadas et al. (2008) was used to measure individuals' ideocentric and allocentric orientation. Sivadas et al. (2008) refined his 32-item (1995) scale to the reduced (2008) ideocentric/allocentric scale that was made use of in this study. According to Sivadas et al. (2008) the reduced scale appeared to measure the realm of ideocentrism and allocentrism adequately.

While the Sivadas et al. (2008) scale was represented by vertical (VI) and horizontal individualism (HI) as well as vertical (VC) and horizontal collectivism (HC), the current study utilised only the horizontal dimensions and referred to as ideocentrism / allocentrism throughout the study.

The ideocentrism subscale was represented by 3-items. A sample item is "I often do my own thing". The allocentrism subscale was represented by 4-items. A sample item is "the well-being of my co-workers is important to me". Higher scores indicated more agreement with the items and orientation while lower scores indicated less agreement. Sivadas et al. (2008) found adequate coefficient alpha reliabilities. A satisfactory Cronbach alpha of .81 was found for ideocentrism and .65 for allocentrism. Although the Cronbach alpha value for allocentrism is below the acceptable .70 threshold of reliability (Hair et al., 2003), it is deemed acceptable in exploratory research. The items used from the Sivadas et al. (2008) scale were therefore deemed acceptable.

Demographics. Demographic information included the participant's gender, age, race, year of study, and field of study as well as additional information to ensure that the participants met the criteria for involvement in this study (to not be involved in both a work and family role). While gender was used as a dichotomous variable and race, year of study and field of study as discrete variables, age was coded as a continuous variable.

Data Analysis

Data preparation comprised of cleaning, coding and reversing certain items. This was conducted in Excel (MS Office) and the data was then imported into Statistica (Version 10) for data analysis. The initial statistical analyses included factor analysis, reliability analysis using Cronbach's alpha, and descriptive statistics. Pearson-product-moment correlation analysis was used to examine the relationships between the variables. Regression analysis was used to test the predictive effect of the identified factors on each dimension of ATMRP. T-tests were used to examine differences across gender. The results section presents the findings of the statistical data analyses.

CHAPTER 4: RESULTS

The purpose of this chapter is to report the results of the statistical analyses conducted to test the propositions. Data analysis comprised of factor analysis in order to determine factor loading of each of the items per summary scale. Descriptive statistics for all scales were calculated in addition to the reliability coefficients (the Cronbach alpha). Pearson product-moment correlation coefficients were calculated to determine the inter-correlations among the variables and multiple regression was used to test the predictive effects of the predictors on *ATMRP*.

Exploratory Factor Analyses

Factor analysis was conducted to assess the dimensionality of the 1) *ATMRP scale*, 2) *Gender Role Ideology scale* and 3) *Ideocentrism/Allocentrism scale* used in this study. The relationships among the responses of the items in each of the scales were evaluated. A minimum factor loading of .3 was used.

Since all items loaded highly on five distinct factors of the *ATMRP scale* and had eigenvalues exceeding 1, all components of the scale were accepted (Kaiser, 1960). An eigenvalue represents the amount of variance successfully extracted by a factor. Only eigenvalues greater than 1 were retained as the principal component should explain at least as much variance as the observed variable (Kaiser, 1960).

Principal-axis factor analysis was suggested for data structuring. This method was used for the items in each of the scales respectively. The items were rotated in order to achieve a more interpretable structure (Terre Blanche et al., 2006). Specifically, varimax normalized rotation was used in order to expose the composite factors while accounting for the highest variance in the original set of variables (Hair et al., 2003).

Attitudes Towards Multiple Role Planning (ATMRP)

The factor analysis (using principal-axis extraction with varimax normalized rotation) revealed the presence of five distinct dimensions as the 25 items loaded on five distinct factors. The *knowledge/certainty* items loaded highly on Factor 1, all items loading above .71. The *flexibility/compromise* items loaded on Factor 2, all items loading greater than .60. The *involvement* items loaded on Factor 3, with all loading above .59. All *independence* items loaded on Factor 4, all items loading above .50, while items of *commitment to multiple roles* loaded on Factor 5, all items loading greater than .49.

Principal component analysis revealed the presence of five significant factors with eigenvalues exceeding 1, explaining 17.9%; 12.2%; 7.4%; 6.5% and 4.1% of the total variance respectively. The five components each showed a number of strong loadings with all variables loading substantially on one dimension respectively. The results of this analysis support Weitzman's (1994) suggestion of five distinct *ATMRP dimensions*.

Table 4 illustrates the factor structure of the items of the *ATMRP scale*.

Table 4
Factor Loadings for the ATMRP Scale

Variables	*KNO*	*FLEX*	*INV*	*IND*	*COMM*
KNO1	**0.76**	0.00	0.05	-0.10	0.23
KNO2	**0.81**	0.07	0.14	-0.11	0.03
KNO3	**0.79**	0.02	0.17	-0.03	0.02
KNO4	**0.81**	0.00	0.07	-0.02	0.07
KNO5	**0.71**	-0.07	0.08	0.06	0.22
INV1	0.10	-0.02	**0.74**	0.09	0.06
INV2	0.10	0.07	**0.78**	0.08	0.01
INV3	0.12	0.10	**0.72**	-0.02	0.11
INV4	0.14	0.06	**0.60**	0.02	0.12
INV5	-0.02	0.16	**0.59**	0.02	0.15
IND1	0.14	-0.01	0.02	**-0.65**	-0.15
IND2	0.13	-0.12	0.04	**-0.69**	-0.08

IND3	-0.06	-0.07	-0.18	**-0.50**	-0.14
IND4	0.09	-0.20	0.06	**-0.62**	-0.04
IND5	-0.11	0.04	-0.16	**-0.59**	-0.02
FLEX1	0.11	**0.68**	0.05	0.05	0.08
FLEX2	0.00	**0.71**	0.07	0.09	0.12
FLEX3	0.07	**0.67**	0.16	0.07	0.15
FLEX4	-0.15	**0.60**	0.03	0.10	0.04
FLEX5	0.00	**0.61**	0.07	0.03	0.19
COMM1	0.24	0.11	-0.02	0.18	**0.53**
COMM2	0.07	0.06	0.07	0.12	**0.64**
COMM3	0.02	0.11	0.27	0.08	**0.54**
COMM4	0.08	0.13	0.02	0.05	**0.49**
COMM5	0.09	0.15	0.17	0.02	**0.55**
Expl.Var	3.25	2.31	2.66	2.01	1.81
Prp.Totl	0.13	0.09	0.11	0.08	0.07
Eigenvalues	**4.49**	**3.04**	**1.85**	**1.62**	**1.03**
Individual total variance (percent)	**17.97%**	**12.15%**	**7.41%**	**6.50%**	**4.11%**
Cumulative total variance (percent)	**17.97%**	**30.13%**	**37.53%**	**44.03%**	**48.14%**

Notes: *N* = 146; Principal-axis factor analysis with varimax normalised data; Each items' five highest loadings are presented in bold face (all above 0.3); *KNO=Knowledge/certainty; FLEX=Flexibility/compromise; INV=Involvement; IND=Independence; COMM=Commitment to multiple roles.*

Gender Role Ideology (GRI)

The 5 items of the *Gender Role Ideology scale* by Judge and Livington (2008) were subjected to principal-axis extraction (unrotated) using Statistica (version 10). Inspection of the results revealed the presence of one component as the analysis showed that the *gender role ideology* scale loaded highly on Factor 1. One significant factor with an eigenvalue of 2.8, accounted for 56% of the total variance.

Table 5 shows factor loading for the *gender role ideology scale.*

Table 5
Factor Loadings for the Gender Role Ideology Scale

Variables	*GRI*
GRI1	**-0.76**
GRI2	**-0.80**
GRI3	**-0.60**
GRI4	**-0.82**
GRI5	**-0.73**
Expl.Var	2.80
Prp.Totl	0.56
Eigenvalue	2.80
Individual total variance (percent)	55.91%

Notes: *N* = 146; Principal-axis factor analysis; Significant loadings are presented in bold face; *GRI=Gender Role Ideology.*

Ideocentrism / Allocentrism (HI and HC)

Factor analysis was conducted on the *ideocentrism (HI) and allocentrism (HC)* items of the Sivadas et al. (2008) scale. The 7 items of the scale were subjected to principal-axis extraction with varimax normalized rotation using Statistica (version 10). The analysis showed that the scale loaded on two factors, items for *HI* loading on Factor 1 and the items for *HC* loading on Factor 2. Inspection of the results found high factor loadings of .70 and above for *HI* while the *HC* items had moderate factor loadings of .3 and above.

Principal-axis factor analysis revealed the presence of two components with eigenvalues exceeding 1.0, explaining 27% and 17% of the total variance respectively, as illustrated in Table 6.

Table 6
Factor Loadings for the Ideocentrism / Allocentrism Scale

Variables	*HI*	*HC*
HI1	**0.70**	0.08
HI2	**0.81**	-0.04
HI3	**0.82**	0.14
HC1	0.05	**0.30**
HC2	0.09	**0.62**
HC3	0.05	**0.70**
HC4	-0.04	**0.56**
Expl.Var	1.83	1.30
Prp.Totl	0.26	0.19
Eigenvalues	1.90	1.23
Individual total variance (percent)	27.17%	17.55%
Cumulative total variance (percent)	27.17%	44.71%

Notes: *N* = 146; Principal-axis factor analysis with varimax normalised data; Significant loadings above .3 are presented in bold face; *HI=Ideocentrism; HC=Allocentrism.*

Descriptive Statistics

Descriptive statistics were conducted for each of the summary variables in an aim to investigate the distribution of the scores on each variable (Terre Blanche & Durrheim, 2002). The five dimensions of the *ATMRP scale*, had means of 3.4 *(SD = .89),* 4.03 *(SD = .59),* 2.56 *(SD = .69),* 3.12 *(SD = .91),* and 4.19 *(SD = .62),* respectively. These were all on a five-point Likert scale. The reported levels of *ATMRP* were thus high. The reported levels of *gender role ideology* were low with a mean of 1.82 *(SD = .79).* The mean of *ideocentrism* was high *(M = 4.19, SD = .73)* while the mean of *allocentrism (M = 3.71, SD = .62)* was similarly above the midpoint of the response scale.

Skewness measures the degree of symmetry of the probability distribution and a skewness greater than 0 indicates that the distribution is skewed to the right (Cramer, 1946). The contrary

is found when skewness is less than 0. Kurtosis measures the thinness of the tails or "peakedness" of a probability distribution. When kurtosis is found to differ from 0 the distribution of items are not normally distributed. Positive kurtosis implies a higher/acute peak and fatter tails while negative kurtosis implies a lower/wider peak and thinner tales (Cramer, 1946).

Table 7 represents the descriptive statistics by illustrating the number of participants, *the mean, standard deviation, skewness, standard error of skewness (SES), kurtosis* and *standard error of kurtosis (SEK)* of the summary scales.

Table 7

Descriptive Statistics for Summary Scales

Variable	*N*	*M*	*SD.*	*Skewness*	*SES*	*Kurtosis*	*SEK*
Knowledge/Certainty	144	3.44	0.89	-0.34	0.20	-0.20	0.40
Commitment	143	4.03	0.59	-0.20	0.20	-0.45	0.40
Independence	143	2.56	0.69	0.08	0.20	-0.03	0.40
Involvement	144	3.12	0.91	0.03	0.20	-0.40	0.40
Flexibility/Compromise	146	4.19	0.62	-1.18	0.20	2.17	0.40
Gender role ideology	143	1.82	0.79	1.06	0.20	0.82	0.40
Ideocentrism	145	4.19	0.73	-1.04	0.20	1.68	0.40
Allocentrism	145	3.71	0.62	-0.27	0.20	-0.19	0.40

Notes: *N* = Number of respondents after casewise deletion of missing data; *M = Mean; SD = standard deviation*

Reliability Analysis

Reliability analysis was used to determine the internal consistency of all the summary scales, the Cronbach's alpha coefficient (α) for each dimension was thus determined. A Cronbach alpha above .7 was deemed to be an acceptable coefficient alpha level (Hair et al., 2003). The current study found high Cronbach alpha levels of above .70 for all scales (excluding the *allocentrism scale*). *Allocentrism* had a moderate Cronbach alpha level of .60.

Table 8 illustrates the correlation matrix illustrating values at the significance levels $*p \leq .05$; $**p \leq .01$; $***p \leq .001$ and reliability analysis conducted with all the summary scales using Cronbach's coefficient alpha (α).

Table 8

Mean, Standard Deviation and Correlation Analysis for Indicators

Variables	*M*	*SD*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
1. Knowledge/Certainty	3.45	0.90	(0.89)							
2. Commitment	4.02	0.59	**0.25****	(0.71)						
3. Independence	2.58	0.68	0.06	**-0.22****	(0.75)					
4. Involvement	3.14	0.91	**0.23****	**0.27****	-0.14	(0.83)				
5. Flexibility	4.21	0.61	0.04	**0.31*****	**-0.20***	**0.19***	(0.81)			
6. Gender Role Ideology	1.81	0.79	0.04	-0.07	0.01	0.00	**-0.22****	(0.86)		
7. Ideocentrism	4.19	0.74	0.13	0.11	-0.01	0.03	0.15	0.01	(0.82)	
8. Allocentrism	3.72	0.61	-0.03	**0.36*****	**-0.30*****	0.16	**0.33*****	-0.13	0.08	(0.60)

Note: *N* = 136 after casewise deletion of missing data * p < .05; ** p< .01; *** p< .001; Cronbach's Alpha reflected on the diagonal, *M = Mean; SD = Standard Deviation*

Correlation Analysis

The relationship between the variables was investigated using Pearson product-moment correlation coefficients. A correlation matrix was used to indicate the significance, direction and strength of each linear relationship between two quantitative variables (Terre Blanche et al., 2006). Correlation analysis with casewise deletion of missing data was conducted to measure the extent to which *ATMRP* was related to *gender role ideology, ideocentrism* and *allocentrism.* Table 8 represents the correlation matrix highlighting values at the significance levels *$*p \leq .05$; **$p \leq .01$; ***$p \leq .001$.*

There was a weak negative correlation between *gender role ideology* and *flexibility ($r = -.22$, $p < .01$). Gender role ideology* did not illustrate significant correlations with the remaining *dimensions of ATMRP.*

Ideocentrism was not significantly correlated to *knowledge ($r = .13$, p = n.s), involvement ($r = .03$, p = n.s), flexibility ($r = .15$, p = n.s)* or *independence ($r = -.01$, p = n.s).* There were no significant correlations between *ideocentrism* and any of the *ATMRP dimensions.*

There was a significant positive correlation between *allocentrism* and *commitment ($r = .36$ $p < .001$),* a significant negative correlation between *allocentrism* and *independence ($r = -.30$, $p < .001$)* and a significant positive correlation between *allocentrism* and *flexibility ($r = .33$, $p < .001$).* There were no significant correlations between *allocentrism* and the remaining *ATMRP dimensions.*

There were some significant correlations found between the *ATMRP dimensions*; specifically *knowledge* and *involvement ($r = .23$, $p < .01$*), independence and *flexibility ($r = -.20$, $p < .05$), involvement* and *flexibility ($r = .19$, $p < .05$),* as well as *commitment* and all four remaining *ATMRP dimensions ($r = .25$, $p < .01$; $r = -.22$, $p < .01$; $r = .27$, $p < 0.1$; $r = .31$, $p < .001$)* respectively.

Multiple Regression

Hierarchical multiple regression was used to test the research propositions in order to investigate the proportion of variance in engineering students' *ATMRP* which were explained by the cultural variables of *gender role ideology*, *allocentrism* and *ideocentrism.* Variables which did not reveal significant correlation with any of the *ATMRP dimensions* were not included in the regression analyses.

Flexibility/Compromise **as an Outcome of** ***Gender Role Ideology***

Hierarchical multiple regression was used to assess whether *gender role ideology* helps predict the *ATMRP dimension* of *flexibility/compromise*, after controlling for the influence of gender, age, race, intention to marry, intention to have children and employment status. The six control variables were entered at Step 1 and explained 4% *(p = n.s)* of the variance in *flexibility/compromise*. After the addition of *gender role ideology* at Step 2, the total variance *(R^2)* explained by the model was 8% *(p = n.s)*. In the final model only *gender role ideology* was a statistically significant *(β = -.20, $p < .05$)* independent variable. Overall, *gender role ideology* did not add a significant incremental variance over and above the variance explained by the control variables *($\triangle R^2$ = .04, p = n.s)*. Although the correlation between *gender role ideology* and *flexibility* was significant *(r = -.22, $p < .01$)* and *gender role ideology* was significant in the regression, the overall regression model was not significant.

Table 9 illustrated the results of the hierarchical regression analysis of *gender role ideology* and *flexibility/compromise.*

Table 9

Hierarchical Multiple Regression Analysis: DV = ATMRP dimension of Flexibility/Compromise

Variables	*Step 1*	*Step 2*
Gender	-0.02	-0.07
Age	-0.07	-0.05
Race	0.03	0.04
Plan to Marry	-0.10	-0.10
Plan to have children	0.12	0.13
Current Employment Status	-0.01	-0.01
Gender Role Ideology		**-0.20***
R^2	0.04	0.08
Change in R^2		0.04

Notes: *N*= 143 (after casewise deletion of missing data); *p ≤ .05; columns show standardized beta coefficients

Independence as an Outcome of *Allocentrism*

Hierarchical multiple regression was used to assess whether *allocentrism* helps predict the *ATMRP dimension of independence*, after controlling for the influence of gender, age, race, intention to marry, intention to have children and employment status. The six control variables were entered at Step 1 and explained 7% *(p = n.s)* of the variance in *independence*. After the addition of entering *allocentrism* at Step 2, the total variance *(R^2)* explained by the model as a whole was 12% *(p < .05).* In the final model only race and *allocentrism* were statistically significant independent variables, with allocentrism recording the highest beta value *(β = -.25, p < .01).* Overall, *allocentrism* did not add a significant incremental variance over and above the variance explained by the control variables *($\triangle R^2$ = .05, p = n.s).*

Table 10 illustrated the results of the hierarchical regression analysis of *allocentrism* and *independence.*

Table 10

Hierarchical Multiple Regression Analysis: DV = ATMRP dimension of Independence

Variables	*Step 1*	*Step 2*
Gender	0.09	0.08
Age	-0.09	-0.07
Race	**0.18***	**0.16***
Plan to Marry	0.02	0.03
Plan to have children	-0.09	-0.06
Current Employment Status	-0.02	0.03
Allocentrism		**-0.25****
R^2	0.07	**0.12***
Change in R^2		0.05

Notes: $N = 143$ (after casewise deletion of missing data); *p ≤ .05 **p ≤ .01; columns show standardized beta coefficients

Commitment as an Outcome of *Allocentrism*

Hierarchical multiple regression was used to assess whether allocentrism helps predict levels of the *ATMRP dimension of commitment*, after controlling for the influence of gender, age, race, intention to marry, intention to have children and employment status. The six control variables were entered at Step 1 and explained 12% *($\beta = .12$, $p < 0.01$)* of the variance in *commitment.* After the addition of entering *allocentrism* at Step 2, the total variance *(R^2)* explained by the model as a whole was 20% *($p < .001$).* In the final model only race and allocentrism were statistically significant independent variables, with allocentrism recording the highest beta value *($\beta = .29$, $p < .001$).* Overall, allocentrism did not add a significant incremental variance over and above the variance explained by the control variables *($\triangle R^2 = .08$, $p = n.s$).*

Table 11 illustrates the results of the hierarchical regression analysis of *allocentrism* and *commitment.*

Table 11

Hierarchical Multiple Regression Analysis: DV = ATMRP dimension of Commitment

Variables	*Step 1*	*Step 2*
Gender	-0.02	-0.00
Age	0.01	-0.01
Race	**-0.19***	**-0.17***
Plan to Marry	-0.15	-0.16
Plan to have children	0.13	0.09
Current Employment Status	0.08	0.05
Allocentrism		**0.29*****
R²	**0.12****	**0.20*****
Change in R²		0.08

Notes: *N* = 143 (after casewise deletion of missing data); *p ≤ .05 **p≤ .01 ***p ≤ .001; columns show standardized beta coefficients

Flexibility/Compromise **as an Outcome of** ***Allocentrism***

Hierarchical multiple regression was used to assess whether *allocentrism* helps predict levels of the *ATMRP dimension of flexibility/compromise*, after controlling for the influence of gender, age, race, intention to marry, intention to have children and employment status. The six control variables were entered at Step 1 and explained 4% *(β = .04, p = n.s)* of the variance in *flexibility/compromise*. After entry of *allocentrism* at Step 2, the total variance *(R^2)* explained by the model as a whole was 13% *(β = .13, p < .01).* In the final model only *allocentrism* was a statistically significant independent variable, recording the highest beta value *(β = .32, p < .001).* Overall, *allocentrism* did not add a significant incremental variance over and above the variance explained by the control variables *($\triangle R^2$ = .09, p = n.s).*

Table 12 illustrated the results of the hierarchical regression analysis of *allocentrism* and *flexibility/compromise.*

Table 12

Hierarchical Multiple Regression Analysis: DV = ATMRP dimension of Flexibility/Compromise

Variables	*Step 1*	*Step 2*
Gender	-0.02	-0.02
Age	-0.07	-0.10
Race	0.03	0.06
Plan to Marry	-0.10	-0.10
Plan to have children	0.12	0.09
Current Employment Status	-0.01	-0.07
Allocentrism		**0.32*** **
R^2	0.04	**0.13** **
Change in R^2		0.09

Notes: $N = 145$ (after casewise deletion of missing data); **p ≤ .01 ***p ≤ .001; columns show standardized beta coefficients

Analysis of Differences across Gender

T-tests were used to investigate differences across groups, specifically whether the summary scales differ between male and female engineering students. The alpha level used as a significance criterion for the tests was .05.

The results of the t-tests indicate that scores on the five dimensions of *ATMRP* do not differ significantly across gender. Proposition 5, which proposed that there are differences across gender in the dimensions of *ATMRP* was therefore not supported.

No significant differences were found between males and females on *allocentrism* (p = .19) or *ideocentrism (p = .07).* There was a significant, yet not practically meaningful, gender effect for *gender role ideology, p* < .001, with the mean for men being significantly higher than that for women. The mean for males' *gender role ideology* was 1.93 *(SD = .85)* while female's mean score was 1.50 *(SD = .49).* These findings are shown in Table 13.

Table 13
T-Tests across Gender and Summary Scales

Variables	*M*	*F*	*t-value*	*df*	*p*	*p – V*
Knowledge/Certainty	3.46	3.39	0.38	142	0.71	0.48
Commitment	4.05	3.98	0.52	141	0.57	0.49
Independence	2.52	2.69	-1.37	141	0.17	0.72
Involvement	3.14	3.08	0.31	142	0.76	0.87
Flexibility	4.20	4.16	0.34	144	0.73	0.80
Gender Role Ideology	**1.93****	**1.50****	**2.95****	**141****	**0.00****	**0.00****
Ideocentrism	4.25	4.00	1.85	143	0.07	0.50
Allocentrism	3.75	3.60	1.30	143	0.19	0.57

Notes*: M=Male; F=Female, df = degrees of freedom, **p ≤ .01*

A summary of the findings are presented in Table 14.

Table 14
Summary of Findings in Terms of the Research Propositions

Proposition	*Description*	*Findings*	*Statistical Analysis*
1	*ATMRP* has five dimensions	Supported	Exploratory Factor Analysis
2	*Gender role ideology* will explain a significant portion of the variance in each of the *ATMRP* dimensions.	Not supported	Correlation Analysis Multiple Regression
3	*Ideocentrism* will explain a significant portion of the variance in each of the *ATMRP* dimensions.	Not supported	Correlation Analysis
4	*Allocentrism* will explain a significant portion of the variance in each of the *ATMRP* dimensions.	2 of the 5 dimensions were not supported. *Commitment was supported* *Independence was supported* *Flexibility/Compromise was supported*	Correlation Analysis Multiple Regression
5	There are differences in the dimensions of *ATMRP* across gender.	Not supported	T-Tests

CHAPTER 5: DISCUSSION

This chapter presents a discussion of the research findings, with specific reference to the propositions of the study. Limitations, contributions and suggestions for future research are presented.

Contributions of this Study

This research contributes specifically to understanding engineering students' ATMRP and the influence of cultural orientations on ATRMRP by:

1. Empirically examining the dimensionality of ATMRP.
2. Empirically examining the relationships between gender role ideology, ideocentrism and allocentrism and each of the five ATMRP dimensions, namely; knowledge/certainty, commitment, independence, involvement and flexibility/compromise, in order to ascertain the effects of these on ATMRP.
3. Empirically examining differences in ATMRP across genders.

Empirically Examining the Dimensionality of ATMRP

It was deemed important to evaluate the psychometric properties of the ATMRP scale to gain a better understanding of the construct. The reason it was found necessary to examine the nature of ATMRP was because a limited number of studies (as outlined in Table 1) had utilised the scale, resulting in a need to further investigate and refine the scale if required. The scale had also not been used in a South African context.

Initial development of the ATMRP scale, using 925 female high school (n = 177), undergraduate (n = 394), and graduate (n = 354) students, hypothesised ATMRP to encompass five dimensions, namely; 1) knowledge/certainty, 2) commitment to multiple roles, 3) independence, 4) involvement and 5) flexibility/compromise. Further investigation of the initial five-factor model however found a four factor model fit, eliminating the flexibility/compromise dimension due to

insufficient factor loading on this dimension (Weitzman & Fitzgerald, 1996). The findings by Weitzman and Fitzgerald (1996) indicate that further refinement of the ATMRP scale is required.

To this end, this study illustrates that an abbreviated scale is feasible. It found that the number of items for each dimension can be reduced from ten to five items based on selecting the five highest loaded items as explanatory factors. A shortened version of the scale is thus possible, comprising of 25-items as opposed to 50-items, while still ensuring the ATMRP scale is a valid measure of the respective construct.

In this study, the degree of correlation between items, illustrating the loadings of the items on the respective factors within each of the dimensions of the ATMRP scale, were tested. It was found that the items of the knowledge/certainty dimension were found to have the highest relationships. The items of the flexibility/compromise dimension were followed by the involvement items and thereafter items from the independence dimension. Items from the commitment dimension were also found to have significant relationships of between .49 and .64 yet overall lower correlation than the other four dimensions. Weitzman and Fitzgerald (1996) conversely found the flexibility/compromise items loaded between .37 and .47 while commitment to multiple roles loaded above .50.

The finding of this study, that the relationships between the commitment items were the weakest of the scale, suggested that this dimension could benefit from further investigation. These findings are consistent with the findings of Keates (1998) who examined the ATMRP scale of female (n = 162) and male (n = 89) undergraduate students in Canada. While those results showed that the knowledge/certainty and the involvement dimension yielded acceptable internal reliabilities for males and females, the commitment dimension displayed unacceptably low internal consistency reliability of .34 for women and .55 for men, thus corresponding to the lower reliability co-efficient of this study. Conversely, McCracken and Weitzman (1997) and Weitzman and Fitzgerald (1996) found the commitment dimension to have sufficient internal consistency. They reported adequate internal consistency of the ATMRP scale using a sample of female secondary and tertiary education students. While four of the five dimensions of the scale were supported, the flexibility/compromise dimension lacked empirical support. In summary, these findings are not

consistent with the findings of this study which showed that the flexibility/compromise dimension yielded strong relationships among the items, while the commitment to multiple roles dimension did not.

As a whole, the findings of this study would suggest that the Weitzman and Fitzgerald (1996) scale is a suitable measure for the construct of ATMRP, as high reliability co-efficients were found. The scale was further deemed to be robust and portable to the current sample as the scale by Weitzman and Fitzgerald (1996) was deemed valid for this sample in a South African context. Further research on the scale should however be conducted to gain clarity on the contradictory findings of the commitment as well as the flexibility/compromise dimensions as illustrated above. The results of this study suggest that the scale has five distinct dimensions and has the potential for a more precise understanding of the attitudes of young men and women towards planning for the combination of work and family roles.

Empirically Examining the Relationships between ATMRP and Gender Role Ideology, Ideocentrism, and Allocentrism

Examining the Relationships between ATMRP and Gender Role Ideology

Contrary to expectation, gender role ideology as a factor did not explain the significant portion of the variance in any of the ATMRP dimensions. Although support was found in terms of gender role ideology and its relationship with flexibility/compromise, and gender role ideology was found to be significant in the regression analysis, the overall regression model was not found to be significant. Proposition 2 was therefore found not to be supported.

While there was a relationships found between gender role ideology and flexibility/compromise, suggesting that the level of compromise individuals are willing to consider, and attitudes they hold in developing flexible plans when preparing for multiple roles, diminishes as gender role ideology tends toward a more traditional gender role orientation (women as homemakers and men as breadwinners) (Greenhaus & Sing, 2003), gender role ideology was not significant in the

regression model, together with the other predictors, in predicting the ATMRP dimension of flexibility/compromise.

Contrary to the findings of this study, Peake and Harris (2002) found that young men and women aspiring to non-traditional careers, such as engineering, can be expected to approach planning for multiple roles differently than young individuals planning for more traditional career involvement. Women who intend pursuing more traditional occupations in terms of gender role ideology were found to be more family-oriented and anticipated having children in the future. Women entering non-traditional occupations, and holding more of an egalitarian gender role orientation, were found to delay multiple role occupancy (Keates, 1998). They were thus more likely to hold flexible views and make compromises when considering the family role compared to women in traditional fields.

Furthermore, the choice made by young women to pursue 'non-traditional' careers, such as engineering, evidently place more demands on work-family domains due to more demanding work conditions, and are likely to be associated with strategies such as the postponement of having children (Keates, 1998).

The engineering field has traditionally been male dominated and for various reasons likely to be challenging for females entering this work environment. The environment does not typically facilitate part-time work, flexible work hours nor maternity leave, which has been found to have a negative influence on the career advancement of women (Cook & Waters, 1998). In addition, Matyas (1992) found that young females are likely to experience difficulty in attempting to manage work in the engineering role in conjunction with coping with the pressures of family and child rearing which would require more flexibility and compromise.

Research has found that purposefully planned strategies on the part of women in terms of successfully managing careers, such as the postponement of having children or having fewer children, are the result of the increasing employment of individuals who hold less traditional (and more egalitarian) gender role orientations (Baber & Mongham, 1988; Barnett et al., 2003; Peake & Harris, 2002; Weitzman, 1994). Fletcher and Bailyn (2005) found that egalitarian oriented men

and women, in comparison with individuals who hold more traditional gender role orientation, are more likely to be flexible concerning the gendered separation of work and family.

The absence of significant gender differences in this study may be due in part to students' (specifically female students) perceptions. Since they are studying toward a qualification in a traditionally male dominated profession, that is progressively seeing an increase of females enter the industry, certain egalitarian gender role views should be apparent. This view may be due in part to the different perceptions individuals hold of the relative value or importance of work and family roles. Research conducted by Gutek et al., (1991) found that women place more value on their family domain than on their work roles, suggesting traditional gender role differences. Since engineering is, or has been, traditionally male dominated, but is now seeing an increase in females entering the profession, individuals (specifically females) studying in this field may be likely to state that they hold more egalitarian gender roles, even if this is not the case.

Correspondingly, research conducted by Mpofu (1994; 1999) and Eaton and Louw (2000) amongst Zimbabwean and South African students took factors into account which were likely to have an influence on students' cultural views. These factors included the effects of exposure to a rural or to an urban environment, and such factors were found to facilitate a change in students' cultural orientation.

Thus it can be argued that, since the knowledge/certainty dimension of ATMRP assesses an individual's understanding and certainty in relation to planning, specifically the ability to plan for the combination of multiple roles (Weitzman, 1994), individuals studying toward a tertiary qualification may not typically possess either knowledge or certainty in terms of the work-family sphere since they may not be involved in, or be planning for, both roles. It is suggested that not possessing knowledge/certainty concerning the demands of work and family may have an influence on the remaining ATMRP dimensions and thus influence the relationship between ATMRP and gender role ideology.

Examining the Relationships between ATMRP and Ideocentrism

There was no support found for proposition 3 as ideocentrism did help to explain a significant portion of the variance in any of the ATMRP dimensions.

Amongst existing literature, researchers have found distinctions in ideocentrism between being either vertical or horizontal in nature. Triandis and Gelfand (1998) clarified this distinction by emphasising horizontal ideocentrism in assuming that, while individuals may in certain respects be similar to one another, the may possess the desire to be unique and distinct from other individuals, and to do things their own way; moreover they can be said to sociable as well as independent. Vertical ideocentrism on the other hand emphasises hierarchy and assumes that individuals are different from each another and concerned with being distinguished/successful and likely to hold desires to achieve and be regarded as being more accomplished than others. This study's measurements of ideocentrism/allocentrism were in line with horizontal ideocentrism, thus emphasising equality rather than superiority or hierarchy amongst individuals. Vertical measures may thus have yielded different results in terms of the relationships between the dimensions of ATMRP and may have found differences in the variance on ATMRP explained by vertical ideocentrism.

The influence of a vertical cultural orientation is therefore suggested to be investigated for future research, specifically in a South African context. Since this study comprised of students studying toward a tertiary qualification, it is suggested that such students would be likely to hold more vertical cultural orientations, of status and accomplishment when comparing themselves to their classmates, and that this may have had an effect on the findings of the study.

As stated earlier in this study, Mpofu (1994; 1999) and Eaton and Louw (2000) found that students exposed to those factors likely to influence their cultural views were likely to experience or display certain cultural orientation attitudes, specifically attitudes more allocentric than ideocentric in nature, attitudes which embrace more independence and autonomy. Similarly, research conducted by Leong (2001) concluded that individuals who are exposed to a cultural orientation different or in addition to their cultural orientation are likely to experience some

cultural change as they may incorporate various characteristics of both cultural views into their own views and values. It is suggested that the above findings may have been present in this study. Since the study was comprised predominately of African students (39%) and White students (33%), it is assumed that the identified university has a similar demographical representation, accordingly ensuring exposure of the participants to alternative cultural views. Research conducted by Van Dyk and De Kock (2004) in a South African context found that Africans hold more allocentric views in comparison to their white counterparts who tend to be more ideocentrically orientated. It is thus likely that exposure to other cultural views may have facilitated some cultural change in students in the sample and accordingly had an influence on this study's findings.

Examining the Relationships between ATMRP and Allocentrism

This study found that a relationship exists between allocentrism and an individual's commitment, independence and flexibility/compromise in relation to multiple roles. These findings may be in line with Powell's view which suggested that allocentric orientated individuals show greater concern in terms of the value placed by participants on both work and family domains. This increased value accorded to multiple role involvement may be due to the individuals' sense of connectedness and interdependence with others as they perceive a need to behave according to social norms (Triandis, 2004). For allocentric individuals, the participation in and commitment to work roles influences the quality of the family domain and vice versa. The relationship between these roles is thus likely to be of importance to and in line with this study's findings.

A positive relationship was found between allocentrism and commitment. Consistent with this study's findings, past research has established that individuals who hold allocentric cultural views displayed higher commitment levels toward both work and family roles. Individuals with ideocentric cultural views have however been found to have an interest and commitment primarily to themselves and the achievement of individual goals. Conversely those individuals with an allocentric orientation displayed commitment to all people belonging to the group and accordingly a willingness to protect the interests and wellbeing of members within the given society (Hofstede, 1986; Steel & Taras, 2010).

Since a relationship was found between allocentrism and commitment, hierarchical multiple regression analysis was conducted. When examining commitment as an outcome of allocentrism, hierarchical regression analysis showed that allocentrism explained a significant proportion of the variance of commitment toward planning for multiple role occupancy, over and above the demographic variables. This finding suggests that individuals with allocentric views display more commitment toward both work and family involvement. This finding supports past research by Kirkman, Lowe, and Gibson (2001) who found that allocentrism was positively associated with commitment of groups at work as well as commitment to superiors. Proposition 4 was therefore supported for the respective ATMRP dimension.

This study found that knowledge/certainty and attitudes of anticipated involvement in multiple roles were not influenced by the participants' allocentric cultural orientation (or ideocentric orientation, as revealed in an earlier finding of this study). A possibility for the non-significant findings may be that students' knowledge/certainty of planning for a multiple role lifestyle may initially have been unclear, thus influencing their attitudes concerning involvement in the uncertain work and family spheres. Research conducted by Peake and Harris (2002) and by Weitzman (1994) affirmed that the level of involvement of individuals relates to their participation in making plans around both work and family roles and the degree of engagement they display in planning for these roles. In this study allocentrism did not predict individuals' attitudes toward their involvement in combining the work and family domains. This may have been because engineering students' attitudes towards involvement in and the level of engagement in, a multiple role lifestyle may not be clear due to the perceived work conditions expected in the engineering field, thus complicating the ability of individuals to be certain about work and family involvement (Baber & Monaghan, 1988).

Additionally, a possible reason for the non-significant finding in this study may be that the study's participants were more vertically allocentrically or ideocentrically culturally orientated and thus not adequately differentiated as being either horizontally (emphasising equality) or vertically (emphasising hierarchy or status) orientated. Future research should therefore explore this relationship.

A negative relationship between allocentrism and independence was found in the study, and is consistent with research conducted by Singelis (1994). Individuals with a cultural orientation characterised by independence possess the desire to take care of their own wellbeing and interests, as autonomy and freedom are of prime importance to them. Interdependence, a distinguishing feature of allocentrism, is however characterised by the importance of interdependence within a group. As per this study's findings, independence would therefore decrease as allocentrism increases and vice versa.

Since a relationship was found between allocentrism and independence, hierarchical multiple regression analysis was conducted. When examining independence as an outcome of allocentrism, hierarchical regression analysis showed that allocentrism explained a significant proportion of the variance of independence in planning for multiple roles, over and above the demographic variables. This suggests that individuals who hold an allocentric cultural orientation hold attitudes of independence and thus have a greater need to independently make decisions about planning for multiple role occupancy (Weitzman, 1994). Proposition 4 was therefore supported for the respective ATMRP dimension.

The above findings support past research by Jones (2007) which indicated that individuals with an ideocentric cultural orientation prefer to be and operate separately and independently from others. They are concerned with personal gain and achievement. Individuals from cultures characterised by allocentrism are conversely expected to perform in a group and cooperative participation and achievement is encouraged. In addition individuals with allocentric views show greater concern for the interdependence of work and family relationships (Powell et al., 2009).

A positive relationship was found between allocentrism and flexibility/compromise. Oesterle, Johnson, and Mortimer (2004) found individuals may make choices in terms of managing multiple role demands and therefore take on part-time work. This choice is often a reflection of individuals' attitudes, behaviours and values. Individuals with an allocentric orientation may be more likely to make compromises in order to ensure that the participation in work and family roles positively influences the quality of experience of the other domain. This study's findings

suggest that flexibility/compromise in terms of work and family roles will increase as an allocentric cultural orientation becomes more apparent.

Hierarchical multiple regression analysis was conducted as a relationship was found between allocentrism and flexibility/compromise. In the process of examining flexibility/compromise as an outcome of allocentrism, hierarchical regression analysis showed that allocentrism explained a significant proportion of the variance of flexibility/compromise while participants were in the process of planning for a multiple role lifestyle. Variance was found over and above the demographic variables of gender, age, race, plan to marry, plan to have children and an individual's current employment status. This finding suggests that individuals with an allocentric cultural orientation are more flexible and willing to entertain compromise when it comes to planning for the involvement of multiple roles. Since allocentrism focuses on shared responsibilities and on upholding relationships (Triandis, 2004), flexibility/compromise is likely to be apparent in individuals who are seeking to ensure relationships in the home and at the workplace are maintained. Proposition 4 was therefore supported for the respective ATMRP dimension.

Empirically Examining Differences in ATMRP across Gender

This study set out to examine the possibility of differences between males and females in their attitudes towards planning for multiple roles. Differences in the influence of ideocentrism, allocentrism and gender role ideology were also considered. Interestingly, T-tests did not indicate any significant differences across gender in individuals' attitudes in terms of knowledge/certainty, commitment to multiple roles, independence, involvement or flexibility/compromise in their planning for multiple roles.

This finding is contrary to past research which has found differences between the work-family experience of men and women. Eccles (1987) found that women typically have plans to integrate and be involved in both the work and family spheres to a greater extent than so men. Similarly, Peake and Harris (2002) considered that women are more likely to be concerned about gathering

knowledge and to be involved in a multiple role lifestyle prior to participation in a family role. The findings however have been inconsistent.

Past research has documented gender similarities and gender differences in work-family experiences. Both men and women have been found to hold strong attitudes in terms of commitment to a multiple role lifestyle (Spade & Reese, 1991), a finding which corresponds to the findings of this study. Barnett et al. (2003) correspondingly found that many young men and women anticipate the combination of work and family roles and accordingly take on a dual-earner relationship. Both men and women have been found to anticipate and understand the challenges they will face in managing a multiple role lifestyle.

An additional explanation for the absence of gender differences in the study may be that stereotypical gender roles are becoming less apparent as men and women are increasingly being represented equally in the workplace (Greenhaus & Sing, 2003; Weitzman, 1994). The field of engineering has however typically been male dominated. Women have been perceived to have less interest in entering the Engineering and Science fields in comparison to males (Matyes & Dix, 1992). Further studies have found that career-oriented women, specifically those planning to enter a male dominated industry such as engineering, are uncertain and lack knowledge regarding long term planning for the combination of work and family roles. These women tend to anticipate strategies that include part-time work or career interruption (Sullivan, 1992). It is suggested that more recently women who are interested in the specific field may hold specific attitudes similar to those of their male counterparts.

Moreover the universal expectation of lack of time and energy constraints placed on individuals in the engineering field due to pressures placed on family by the demanding work environment and vice versa (Bureau of Labor Statistics, 2011; Matyes & Dix, 1992), it is suggested that women who enroll for Engineering qualifications may initially hold distorted attitudes toward the combination of work and family roles, diminishing the differences between male and females in terms of such attitudes early on in their careers. Matyes and Dix (1992) found that women are likely to leave the industry as they progress through their careers due to the increase in the work-family conflict.

Limitations

Certain limitations to the conducting of the study were present. Since a cross-sectional design was used, causal inferences cannot be drawn (Hair et al., 2003). A longitudinal study could accordingly be employed in future research of this nature in order to make allowance for the testing of a projected causal relationship. This would provide valuable information in terms of whether students' attitudes toward planning for the combination of work and family roles changes over time as they progress through their studies and their careers, and how these changes ultimately affect their experiences of the combination of roles.

Non-probability sampling was used in the selection process. Since students from a tertiary institution in South Africa were selected by convenience sampling, the results may not be representative of the general population, thus jeopardizing the external validity of the study (Hair et al., 2003). An inadequate sample size can have an influence on the accuracy and quality of research conducted and consequently on the research findings (Bartlett, Kotrlik, & Higgins, 2001). A larger, more representative sample size is thus recommended for future research as the size of this study's sample may have had an influence on the limited number of statistically significant findings.

Of the total 1327 students that were invited to participate in the survey 146 students responded, resulting in an 11% response rate. The low response rate may be attributed to one of three reasons. The first reason could be the nature of administering the survey online. Since the students were emailed a link to the survey, they may have perceived this email as spam and discarded it. Secondly, the survey was emailed to the students during their examination period which is likely to have had an effect on the responses received. It is recommended that these suggested limitations be taken into account in future research of this nature.

Meade, Watson, and Kroustalis (2007, p.1) describe common method variance (CMV) as "the degree to which correlations are altered (inflated) due to a methods effect". This creates an artificial internal consistency by producing variables from a common source (the same participant). The effect of CMV has been a threat commonly considered in research studies (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003; Meade et al., 2007), particularly in studies utilising self-report measures by

means of the collection of data from a survey questionnaire (Chang, van Witteloostuijn, & Eden, 2010). Due to data having been collected using self report survey questionnaires, there is a possibility of CMV (Chang et al., 2010; Meade et al., 2007).

Meade et al. (2007) found that CMV is persistent in organisational psychological research. Although negatively worded items appeared in the ATMRP scale, it is recommended that a randomized order of items be employed in future where feasible in order to avoid CMV.

Suggestions for Future Research

In this study the attitudes of engineering students toward planning for future multiple roles were examined. Gender role ideology, ideocentrism, allocentrism, and gender were taken into account as factors influencing students multiple role attitudes. Propositions regarding the influence of the antecedents on ATMRP were mostly not supported. It is recommended that future research investigate whether the results of this study generalize to students studying toward other professions such as commerce, arts, and sciences.

As stated above, since vertical cultural patterns were not investigated in this study, an important contribution to future research would be determining whether this cultural pattern, as opposed to individuals' horizontal cultural views, has a significant influence on ATMRP. A suggestion for future research would be to include the vertical ideocentric and vertical allocentric items from the Sivadas et al. (2008) scale in determining the possible influence this cultural dimension has on individuals' attitude toward planning for a multiple role lifestyle. Future research could moreover investigate the result of the significant regression coefficient found for race (See Tables 10 and 11).

In addition future research could investigate specific attitudes individuals hold regarding a multiple role lifestyle, such as attitudes towards the importance of each domain, and the compromises individuals may be willing to make in order to pursue their chosen careers and meet their family responsibilities. The working conditions and environment of the industry and profession individuals are entering could initially be examined in order to determine if students have adequate and accurate knowledge of the conditions under which they will be working before they enter the work place.

Should students have a prior awareness of the working conditions of a field such as engineering, compatibility with regards to anticipated family responsibilities (including available flexitime, part-time work and maternity/paternity leave policies) could be considered and planned for. Increased knowledge of the industry or profession individuals anticipate entering could be of value in diminishing future work-family conflict if careers that are compatible with future family plans are being considered. Entry into a suitable career could facilitate employee engagement thus ensuring that the individual is dedicated to and absorbed in the job (Bakker & Schaufeli, 2008), and is likely to facilitate positive spill over in the form of the transfer of affect, skills, behaviours and values from one domain to another (Edwards & Rothbard, 2000), specifically between work and family roles.

Work and family domains could be investigated in greater depth by examining generational differences around the importance of combining multiple roles and the relative value placed on each. Another avenue that future research could follow would be the examination of how individuals' attitudes toward planning for work and family involvement mediate the relationship between individual factors influencing attitudes, such as cultural orientation, values and beliefs, and socioeconomic status, and ultimately undertaking effective planning strategies. In addition future research and longitudinal studies could consider the relationship between planning for the combination of multiple roles and the actual experience of being involved in multiple roles, should planning have taken place or not.

Implications of This Research for Young People

Insight into individuals' attitudes toward planning for multiple role occupancy can help create a better understanding of what young people aspire to and what is important to them in terms of work and family spheres. According to Weitzman (1994, p. 23) "applying relevant findings to interventions aimed to increase an individual's level of multiple-role realism fosters the educational and preventive goals of counseling psychology".

This kind of research and information on ATMRP could benefit organisations and be utilised to educate graduates regarding multiple-role engagement and the pressures faced when combining incompatible pressures. Organisations could benefit by fostering awareness of these issues and thus facilitating a work-life balance, one which is likely to have a positive effect on performance in the work place.

Matyes and Dix (Frehill, 2011) showed that the presence of women in previously male dominated professions and industries is escalating, particularly in the engineering and science fields. However there is a negative correlation between women's progress in their careers in these career field and their age. Due to time and energy constraints women are more likely to experience conflict between work and family responsibilities, in part explaining the departure of women from the industry. It is therefore vital that young women are made aware of the challenges they face in combining multiple roles. Insight into the ATMRP of individuals is therefore essential in order for organisations and the industry to plan positive interventions by making individuals aware of the nature and extent of work and family roles that they may experience in the future. Accurate and realistic knowledge of the industry individuals are entering is equally important.

Final Notes

Since a balanced lifestyle, through the successful combination of work and family roles, is desired by most individuals (Keates, 1998), the examination of the ATMRP construct provides a better understanding of multiple role planning attitudes of engineering students. The influence of an

individual's cultural orientation provides a foundation for identifying individual differences and understanding the role that these differences, or lack thereof, play in multiple role planning attitudes.

Although the study did not yield significant findings in terms of the influence of ideocentrism and gender, there were findings in terms of the influence of allocentrism on commitment, independence, and flexibility/compromise as well as gender role ideology's influence on flexibility/compromise. These findings provide valuable insight into the attitudes of individuals toward planning for multiple roles, thus contributing to the literature. Individuals' ATMRP are likely to be influenced by alternative variables, such as additional cultural variables, including an individual's need for power/social inequality/status and risk aversion/ambiguity intolerance (Sharma, 2010). Alternative variables should be further investigated since the combination of work and family are typically seen, by individuals involved in multiple roles, as incompatible pressures likely to have negative consequences for each domain (Greenhaus & Beutell, 1985).

Individuals should timeously consider planning strategies for anticipated future work and family roles as an informed planned orientation is likely to inform and affect future plans and ensure an optimum combination of multiple roles. An orientation in the course of which individuals invest time and energy in planning anticipated work and family roles has been shown to lessen the likelihood of negative challenges and interference in the managing of a multiple role lifestyle (Lapierre & Allen, 2006). Attitudes toward planning provide a sound foundation for the process of considering potentially incompatible pressures and are likely to enhance a positive work-life balance, particularly if planning for the permutation of multiple spheres is taken into account in the process. This study can be said to extend the limited literature and urges individuals to consider and apply suitable planning strategies with the object of ultimately achieving a more balanced lifestyle in the future.

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APPENDIX A: PILOT STUDY

A pilot study was deemed important for two reasons. Firstly, a pilot study was required to assess the reliability of the scale developed by Weitzman and Fitzgerald (1996) measuring individuals' attitudes toward multiple role planning (ATMRP). The scale had been used in limited studies, as outlined in Table 1, and an analysis on the scale was therefore required. There are no published empirical studies on attitudes toward multiple role planning conducted in South African and for purposes of this study an analysis was needed.

Weitzman and Fitzgerald (1996) established evidence for the initial validity and reliability of four of the five scales, the flexibility/compromise dimension yielding a lower reliability, with a Cronbach alpha of .68. Past research had indicated a need for psychometric refinement as varying internal consistency levels had been found across studies and differing dimensions of the scale (Ganginis, 2008; Keates, 1998). Weitzman and Fitzgerald (1996) asserted that while the scale presented a significant foundation to assess individuals' attitudes toward planning for work and family roles, the scale would benefit from further research.

Secondly, there was concern regarding the number of items and the length of the Weitzman and Fitzgerald (1996) scale. The original ATMRP scale consisted of 10 items per each of the five sub-scales, totaling 50 items. Principle component factor analysis was utilised since it is recommended as a data reduction method to extract the maximum variance from the variables (Thompson, 2004). The 50 items were subjected to principle component extraction, using Statistica (version 10), to assess the dimensionality of the scale. The relationships among the responses of the items were evaluated and eliminated items not contributing to the internal consistency.

The results revealed the presence of two factors for the knowledge/certainty dimension, four factors for commitment, as well as independence, three factors for involvement, and four factors for flexibility/compromise. The factors with the highest loadings were retained while the items that did not load highly, and had a negative effect on the overall reliability of the scale, were eliminated. Principal-axis factor analysis was accordingly utilised on the five highest loaded factors for data structuring (Terre Blanche, Durrheim, & Painter, 2006). The factor analysis found that the items for

each of the five dimensions subsequently loaded onto one distinct factor respectively. The remaining items were utilised in the study.

According to MacCallum, Widaman, Zhang, and Hong (1999) the use of a larger sample size results in more reliable factor loading. A sample size larger than 100 participants was therefore recommended. The pilot study for that reason consisted of 110 participants.

Participants

The participants of the pilot study comprised of young men and women who were not yet engaged in combining a work and family role and had completed secondary education. The pilot study targeted 110 participants all of which completed the survey. The participants were aged between 16-26 years. 83 participants (75%) were students of a non-profit public-private partnership programme between the construction sector and the Western Cape Education Department, in South Africa. The public-private partnership programme aimed at exposing students to the construction industry in order to determine if Engineering and cognate fields are a suitable match. The students were selected for the public-private partnership programme in order to increase the number of qualified individuals entering the Engineering sector; specifically the construction industry (Go for Gold, n.d.). Additionally, the pilot sample comprised of 28 Engineering students from various tertiary institutions in South Africa.

Table 15 illustrates the demographic characteristics of the pilot sample.

Table 15
Demographic Characteristics of the Pilot Sample

Demographic	*Category*	*Frequency*	*%*
Gender	Male	64	58%
	Female	46	42%
	White	48	44%
Race	African	46	42%
	Prefer not to answer	7	6%
	Coloured	6	5%
	Indian	3	3%
Qualification	Secondary Education (Grade 12)	83	75%
	Studying toward an Undergraduate qualification (Engineering / Built Environment)	28	25%

Most participants (75%) were not employed or were employed for less than 20 hours per week, 7% were employed on a part-time basis and 5% of participants were employed full time. Most (81%) stated that they plan to marry, 12% were unsure of getting married, 6% stated they did not plan to marry, and 1% stated that the question was not applicable to them. Of the 110 participants, 80% stated they planned to have children, 14% were undecided and 6% do not plan to have children.

Results

Factor Analysis Conducted on the Full Attitudes Toward Multiple Role Planning (ATMRP) Scale by Weitzman and Fitzgerald (1996).

Table 16 illustrates the five reduced items factor structure of the knowledge/certainty dimension of the ATMRP scale.

Table 16
Factor Loading for the Reduced Knowledge/Certainty Dimension

Variable	*Factor 1*
KNO1	**-0.55**
KNO2	**-0.70**
KNO3	**-0.76**
KNO4	**-0.65**
KNO8	**-0.39**
Expl.Var	1.95
Prp.Totl	0.39
Eigenvalues	1.95
Individual total variance (percent)	39.07
Cumulative total variance (percent)	39.07

Notes: N = 110; Principal factor analysis with varimax normalised data; Significant loadings are presented in bold face (all above 0.3); KNO=Knowledge/certainty

Table 17 illustrates the five reduced items factor structure of the commitment dimension of the ATMRP scale.

Table 17
Factor Loading for the Reduced Commitment Dimension

Variable	*Factor 1*
COMM1	**-0.53**
COMM4	**0.57**
COMM6	**-0.56**
COMM9	**-0.54**
COMM10	**0.71**
Expl.Var	1.71
Prp.Totl	0.34
Eigenvalues	1.82
Individual total variance (percent)	36.48
Cumulative total variance (percent)	36.48

Notes: N = 110; Principal factor analysis with varimax normalised data; Significant loadings are presented in bold face (all above 0.3); COMM=Commitment to multiple roles

Table 18 illustrates the five reduced items factor structure of the independence dimension of the ATMRP scale.

Table 18
Factor Loading for the Reduced Independence Dimension

Variable	*Factor 1*
IND1	**-0.50**
IND2	**-0.66**
IND3	**-0.67**
IND4	**-0.42**
IND10	**-0.32**
Expl.Var	1.41
Prp.Totl	0.28
Eigenvalues	1.41
Individual total variance (percent)	28.12
Cumulative total variance (percent)	28.12

Notes: N = 110; Principal factor analysis with varimax normalised data; Significant loadings are presented in bold face (all above 0.3); IND=Independence

Table 19 illustrates the five reduced items factor structure of the involvement dimension of the ATMRP scale.

Table 19
Factor Loading for the Reduced Involvement Dimension

Variable	*Factor 1*
INV3	**-0.58**
INV4	**-0.63**
INV5	**-0.77**
INV7	**-0.55**
INV10	**-0.67**
Expl.Var	2.07
Prp.Totl	0.41
Eigenvalues	2.07
Individual total variance (percent)	41.45
Cumulative total variance (percent)	41.45

Notes: N = 110; Principal factor analysis with varimax normalised data; Significant loadings are presented in bold face (all above 0.3); INV=Involvement

Table 20 illustrates the five reduced items factor structure of the flexibility/compromise dimension of the ATMRP scale.

Table 20
Factor Loading for the Reduced Flexibility/Compromise Dimension

Variable	*Factor 1*
FLEX1	**-0.45**
FLEX2	**-0.57**
FLEX4	**-0.55**
FLEX5	**-0.48**
FLEX6	**-0.45**
Expl.Var	1.27
Prp.Totl	0.25
Eigenvalues	1.27
Individual total variance (percent)	25.34
Cumulative total variance (percent)	25.34

Notes: N = 110; Principal factor analysis with varimax normalised data; Significant loadings are presented in bold face (all above 0.3); FLEX=Flexibility/compromise

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APPENDIX B: FULL INSTRUMENT

About Me and Others						
Please show how much you agree with each of the following statement by ticking a number from 1 to 5 (1 = strongly disagree; 5 = strongly agree)		**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1	My happiness depends very much on the happiness of those around me	**1**	**2**	**3**	**4**	**5**
2	The well-being of my classmates is important to me	**1**	**2**	**3**	**4**	**5**
3	If a classmate gets a prize, I would feel proud	**1**	**2**	**3**	**4**	**5**
4	I feel good when I cooperate with others	**1**	**2**	**3**	**4**	**5**
5	I enjoy being unique and different from others in many ways	**1**	**2**	**3**	**4**	**5**
6	I often "do my own thing"	**1**	**2**	**3**	**4**	**5**
7	I am a unique individual	**1**	**2**	**3**	**4**	**5**
8	I would do what would please my family, even if I detested that activity	**1**	**2**	**3**	**4**	**5**
9	I usually sacrifice my self-interest for the benefit of my group	**1**	**2**	**3**	**4**	**5**
10	Children should feel honoured if their parents receive a distinguished award	**1**	**2**	**3**	**4**	**5**
11	I would sacrifice an activity that I enjoy very much if my family did not approve of it	**1**	**2**	**3**	**4**	**5**
12	I enjoy working in situations involving competition with others	**1**	**2**	**3**	**4**	**5**
13	Competition is the law of nature	**1**	**2**	**3**	**4**	**5**
14	Without competition it is not possible to have a good society	**1**	**2**	**3**	**4**	**5**

About Women at Work						
Please show how much you agree with each of the following statement by ticking a number from 1 to 5 (1 = strongly disagree; 5 = strongly agree)		**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
15	A woman's place is in the home, not the Workplace	**1**	**2**	**3**	**4**	**5**
16	A wife with a family has no time for outside Employment	**1**	**2**	**3**	**4**	**5**
17	Employment of wives leads to more criminal behaviour amongst the youth	**1**	**2**	**3**	**4**	**5**
18	It is better if the man is the achiever outside the home and the woman takes care of the home and family	**1**	**2**	**3**	**4**	**5**
19	Women are happier if they stay home and take care of children	**1**	**2**	**3**	**4**	**5**

About Combining Work and Family

	Please show how much you agree with each of the following statement by ticking a number from 1 to 5 (1 = strongly disagree; 5 = strongly agree)	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Knowledge about Future Roles						
20	I don't know how to plan for combining my career and my family	1	2	3	4	5
21	Figuring out how to balance my career and my family confuses me because I don't feel I know enough about myself or about the stresses involved in balancing these roles	1	2	3	4	5
22	I can't understand how some people can be so certain about how to successfully manage career and family responsibilities	1	2	3	4	5
23	When it comes to combining my career with my family, I can't seem to make up my mind how to do it successfully	1	2	3	4	5
24	I'm very clear on how to plan for combining my career and family responsibilities	1	2	3	4	5

	Please show how much you agree with each of the following statement by ticking a number from 1 to 5 (1 = strongly disagree; 5 = strongly agree)	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Commitment to Future Roles						
25	You should choose ways of managing your career and family obligations so that you can "do it all"	1	2	3	4	5
26	When it comes to work and family, there's no reason why people can't "have it all" (e.g., time for both work and family) if they just try hard enough	1	2	3	4	5
27	I am committed to having a lifelong career in addition to raising a family	1	2	3	4	5
28	The most important aspect of balancing a career and a family is the personal pleasure that comes from doing it	1	2	3	4	5
29	I'm not going to give up anything. I really want to have both a career and a family	1	2	3	4	5

	Please show how much you agree with each of the following statement by ticking a number from 1 to 5 (1 = strongly disagree; 5 = strongly agree)	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Independence in Future Roles						
30	Other people (e.g., parents, friends) usually can suggest the best ways to manage career and family responsibilities for those they care about	1	2	3	4	5
31	I plan to look to my friends and family for suggestions about balancing my career with my parenting responsibilities	1	2	3	4	5
32	I don't want anybody else to tell me how to balance my career and my family responsibilities	1	2	3	4	5
33	Your friends or family can probably give you the best advice on ways to manage your career and your family	1	2	3	4	5
34	Choosing how to best manage my career and my family is something I have to do on my own. Nobody can tell me how to do it	1	2	3	4	5

Please show how much you agree with each of the following statement by ticking a number from 1 to 5 (1 = strongly disagree; 5 = strongly agree)		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Involvement in Future Roles						
35	I'm not going to worry about how to combine my career with my family until I'm actually involved in both of these roles	**1**	**2**	**3**	**4**	**5**
36	I don't' worry about managing my career and family responsibilities because I'm sure it will sort itself out sooner or later	**1**	**2**	**3**	**4**	**5**
37	There is no point in trying to decide how to deal with the demands of a career and a family when the future is so uncertain	**1**	**2**	**3**	**4**	**5**
38	You shouldn't worry about trying to combine your career with your family because so much depends on things that are out of your control	**1**	**2**	**3**	**4**	**5**
39	It's very important to me to try and figure out ahead of time how I will balance my career and family responsibilities	**1**	**2**	**3**	**4**	**5**

Please show how much you agree with each of the following statement by ticking a number from 1 to 5 (1 = strongly disagree; 5 = strongly agree)		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Flexibility across Future Roles						
40	When deciding how to manage your career and family responsibilities, it's important to come up with flexible plans	**1**	**2**	**3**	**4**	**5**
41	I feel it is important to listen to my partner or spouse's ideas and suggestions about the best ways for me to balance my career and my family	**1**	**2**	**3**	**4**	**5**
42	I intend to work things out with my partner or spouse when it comes to deciding on strategies for combining career and family responsibilities	**1**	**2**	**3**	**4**	**5**
43	It's very likely that the plans I'll make now for managing multiple roles will undergo some change when I actually carry them out in the future	**1**	**2**	**3**	**4**	**5**
44	When thinking about how to combine a career with a family, you should consider several different strategies	**1**	**2**	**3**	**4**	**5**

About Me

D1	**Gender**	Female	Male

D2	**Age in years**	17	18	19	20	21	22
		23	24	25	26	Other: _____	

D3	**Race**	African	Indian	Coloured	Asian	White	Prefer not to answer

D4	**Year of study**	1s year	2nd year	3rd year	4th year	5th year (Extended Programme)	Masters and higher

D5	**Field of study**	Chemical Engineering	Civil Engineering	Electrical Engineering	Mechanical Engineering	Construction Management	Architectural Studies
		Other					

D6	**When do you plan to enter the world of work**	2011	2012	2013	2014	2015	2016
		Other					

D7	**Home language**	English	Afrikaans	Xhosa	Zulu	Other: _____

D8	**Do you plan to marry?**	Yes	No	Unsure	Not Applicable

D9	**Do you plan to have children**	Already have children	No	Undecided	Yes

D10	**Current employment**	Full time	Part-time / casual	Not employed or employed less than 20 hours per week

D11	**When you were a child, did your parents have paid employment**	Both parents worked	Only father worked	Only mother worked	Both parents did not work	Not applicable

D12	**Area where you were raised**	Urban	Rural

D13	**Religious Identification**	Christian	Muslim	Jewish	Hindu	Nothing	Prefer not to answer