

Work-family enrichment: Development, validation and application of a new instrument within the South African context

**M. De Klerk
12377953
MA (Industrial Psychology)**

Thesis submitted in fulfilment of the requirements for the degree
Philosophiae Doctor in Industrial Psychology at the Potchefstroom
Campus of the North-West University

Promoter: Dr. J.A. Nel
Co-Promoter: Dr. F.E. Koekemoer

May 2014

DECLARATION

I, Marissa de Klerk, hereby declare that the thesis titled “Work-family enrichment: Development, validation and application of a new instrument within the South African context”, is my own work and that the views and opinions expressed in this research are those of the author and of relevant literature references as indicated in the references. I further declare that the content of this research will not be handed in for any other qualification at any other tertiary institution.

A handwritten signature in black ink, appearing to read 'M. de Klerk', with a stylized flourish at the end.

MARISSA DE KLERK

NOVEMBER 2013

REMARKS

The following facts and factors should be kept in mind:

- This research study follows the style of references as well as editorial guidelines as prescribed by the *Publication Manual (6th edition)* of the American Psychological Association (APA). This practice is in accordance with the policy of the Programme in Industrial Psychology of the North-West University, Potchefstroom Campus, which stipulate the use of APA style in all scientific documents as from January 1999.
- The thesis is submitted in the form of four research articles.
- The format style of the research articles (chapters 2, 3, 4 and 5) is in accordance with the guidelines for authors of the South African Journal of Industrial Psychology.
- A revised version of research article 1 (chapter 2) was published in the *Journal of Psychology in Africa* (December 2012). The main author of the article was the student followed by the co-authors (promoters) who provided valuable insight into the write-up of the article.
- Research article 2 (chapter 3) was published in the *South African Journal of Industrial Psychology* (2013). The main author was the student, followed by the co-authors (promoters) who helped the student gain valuable insight into the write-up of the article, as well as the co-author (Dr. C. Hill) who conducted the statistical analyses and who assisted with the write-up of the results.
- Some of the information that was provided (especially in chapter 4 and 5) might be repetitive, seeing that the sample of the research was similar.

ACKNOWLEDGEMENTS

I would like to thank my Heavenly Father for blessing me with the talent, cognitive ability and enduring emotional strength and for giving me the patience, perseverance and self-belief to complete this thesis. Thank you, Father, for giving me this opportunity and for being my Anchor during the entire journey. I love you with all my heart.

Jeremy Aldana remarked, “It’s not so much the journey that’s important; as is the way that we treat those we encounter and those around us, along the way.” Therefore, I would like to express my gratitude towards a few individuals that I encountered and who formed part of my PhD journey:

- My parents, Johan and Amanda, thank you for your unconditional love, support, guidance, and prayers, and for giving me opportunities in life as well as believing in me. Our Heavenly Father truly blessed me with parents like you – words cannot describe how much you both mean to me. I love you both very much.
- My late grandmother ouma Lida, thank you for your love, support and prayers.
- My late best friend Vlooi (Toeter), thank you for being there to encourage me. I miss you a great deal.
- My promotor, colleague and friend Dr. Alewyn Nel, I am so privileged to have you as my promotor. Words cannot express my appreciation towards you. My heartfelt thanks for all your patience, endless support, encouragement, guidance as well as your time and effort, during this entire process. Thank you also for inspiring me and making me realise that this journey is worthwhile. I learned a great deal from you as a researcher, promoter, colleague and friend. I will cherish your influence during this journey throughout my life.
- My co-promoter and colleague, Dr. Eileen Koekemoer, thank you for your guidance, support and making time for me during this process. Your appreciation for detail and structure taught me a great deal during this process.
- Dr. Carin Hill, thank you for helping me with the Rasch statistical analyses of the second article. I learned a great deal from you during this process.
- Prof. Jan Visagie, thank you for your support and affording me the necessary time to complete this thesis.

- Prof. Karina Mostert, thank you for your guidance in starting this research project and the financial support you gave me.
- Dr. Joe Grzywacz, thank you for your inputs during the item-development phase of this research.
- Thank you to all the Honours students for collecting questionnaires from participants and capturing the data.
- Thank you to all the participants from the various organisations, for your willingness to take part in the studies.
- Rev. Claude Vosloo, thank you for the professional manner in which you conducted the language editing.
- Thank you to all my colleagues and friends at the School of Human Resource Sciences (Proff. Jan Visagie, Herman Linde, Bennie Linde, Cara Jonker, Lene Jorgensen, Werner Havenga; also Jeanine Pires-Putter, Bouwer Jonker, Gerhard Rabie, Lizelle Brink, Felicity van Vrede, Tshepo Kalanko, Eva Sekwena, Chimoniq Serfontein, Ronel van Tonder and Marianna Hoeksema) and my colleagues at the WorkWell Research Unit (Proff. Jaco Pienaar and Karina Mostert; also Crizelle Els, Louise Jansen van Rensburg and Mariana Kleynhans), for your support and words of encouragement.
- Thank you to Prof. George Sieberhagen, Drr. Elmari Deacan and Carin Hill; also Gerhard Rabie, Lizelle Brink, Judie Coetzee, Cecile van Zyl, Liezl-Marie Kruger for your inputs and reviewing of items during the item-development phase of this study.
- Thank you to the North-West University for providing me with a PUK-bursary.
- Thank you to the Journal of Psychology in Africa for publishing my first article.
- Thank you to the South African Journal of Industrial Psychology for publishing my second article.
- Last but not least, a special word of thanks to my dearest friends Riette Robbertse, Vanessa du Plessis, Irene Langemaat and Jeanine Pires-Putter for your cherished friendship and continuous support and for showing patience with me during this process.

The financial assistance of the National Research Foundation (NRF) towards this research is also acknowledged. Opinions expressed and conclusions arrived at are those of the author and are not necessarily to be attributed to the National Research Foundation.

Summary

Topic: Work-family enrichment: Development, validation and application of a new instrument within the South African context

Key terms: Work-family enrichment, family-work enrichment, scale development, item evaluation, psychometric properties, antecedents, outcomes, South African context.

Over the past few decades it has become evident that the work/family interface is a much broader concept that does not only stress the negative side of the relationship, but also include a positive side. This refers to the process by which participation in one role (e.g. work role) is made better or easier by virtue of participation in the other role (e.g. family role). South Africa is a multicultural society, which consists of four groups (i.e. Black, White, Coloured and Indian), speaking eleven official languages. All of these groups are faced with unique and different circumstances. Apart from cultural, ethnic and linguistic differences, other divergent elements may exist (i.e. values and norms). Therefore South African employees may experience the positive side of the work/family interface differently from employees within other countries. To add to the problem, it is not clear how South African employees' experiences of enrichment between work and family domains compare to the experiences of employees in other countries. Furthermore, to date no measuring instrument to assess the enrichment between work and family domains in both directions (work-to-family and family-to-work) exists, that is unique to the South African context. This could pose potential problems for organisations and for future studies on the positive side of work/family in South Africa.

The objectives of this research were 1) to determine how the positive side of the work/family interface, particularly work-family enrichment, is conceptualised according to the literature; 2) to develop a new work-family enrichment instrument that is suitable for the South African context and that addresses conceptual and measurement issues relating to previous positive measurements of the work/family interface; 3) to investigate the psychometric properties of the newly developed work-family enrichment instrument; and 4) to assess antecedents and outcomes of work-family enrichment among employees within the South African context.

The study consisted of four phases. During the first phase, following an extensive review of literature covering the positive side of the work/family interface, a theoretical framework was proposed for the study. Thereafter, a new instrument that measures work-family enrichment was developed based on the proposed theoretical framework. The instrument was tested via Rasch modelling with a pre-liminary study ($N = 527$), in order to overcome some of the measurement limitations from the previous positive work-family instruments. This test was followed by investigating the psychometric properties (i.e. construct validity, discriminant validity, convergent validity and external validity; $N = 627$) of the newly developed MACE Work-Family Enrichment Instrument. During the final phase, antecedents, work-family enrichment and outcomes were assessed in the South African context. In both phases 3 and 4, the following instruments (accompanied by the new instrument) were utilised, namely the Work Resources Scale, Home Resources Scale, Utrecht Work Engagement Scale, Family Engagement Scale, Job Satisfaction Scale, Career Satisfaction Scale, Life Satisfaction Scale, Family Satisfaction Scale and the Work-family Enrichment Scale.

During the first phase, the literature revealed that the positive side of the work-family interface is presented by various concepts (i.e. work-family enhancement, work-family facilitation, work-family positive spillover and work-family enrichment). The review also revealed that, to date, the work-family enrichment concept has been the only concept in literature on the positive work/family interface that is grounded in a properly developed conceptualised theoretical model. The fundamental thinking behind the work-family enrichment model is that work and family each provides individuals with resources (i.e. skills and perspectives, psychological and physical, social-capital, flexibility, material) in the one domain, that may help the individual improve the quality of his/her performance in the other domain. These resources thus enable improved performance in the other role either directly (i.e. instrumental path) or indirectly (i.e. affective path).

During the second phase a new work-family enrichment instrument was developed, namely the MACE Work-Family Enrichment Instrument. This instrument was based on the proposed work-family enrichment theoretical model for both directions (i.e. work-to-family and family-to-work). Initially 133 items were developed that the researcher obtained from the existing literature, and 161 items were self-developed. During the evaluation study, various problematic items were eliminated by using the Rasch measurement model. The third phase included the validation study in which the psychometric properties of the new MACE

instrument was investigated. The results provided evidence for construct validity, discriminant validity and convergent validity, and showed significant relations with external variables. Adequate internal consistency was also found for the proposed scales. The final number of items retained after this phase in the development and pilot study of the MACE Work-Family Enrichment Instrument were 34.

During the final phase, various relationships were pointed out between antecedents (i.e. various work resources and home resources), work-family enrichment dimensions, as well as dimensions and outcomes of this type of enrichment. These included work-engagement dimensions, family engagement dimensions, as well as satisfaction-dimensions for work, career, life and the family environment. The results of these relationships were found to be in accordance with other literature on the positive side of the work/family interface.

The present study provided evidence for the psychometric properties of the new MACE instrument, which researchers and managers can use to investigate the specific enrichment between work and family domains of employees in a South African context. The results give researchers and managers insight into the specific antecedents (e.g. work resources) and outcomes (e.g. job satisfaction) that play a role in work-family enrichment. This insight can be used as basis on which interventions can be developed to deal with these issues currently.

Recommendations were also made for future research.

Opsomming

Onderwerp: Werk-gesinverryking: Ontwikkeling, validering en toepassing van 'n nuwe instrument binne die Suid-Afrikaanse konteks

Sleutelwoorde: Werk-gesinverryking, gesin-werkverryking, skaalontwikkeling, item-evaluering, psigometriese eienskappe, oorsake, gevolge, Suid-Afrikaanse konteks.

Oor die afgelope dekades het dit duidelik geword dat die werk/gesinspektrum 'n wydlopende konsep omskryf, wat nie net op die negatiewe kant van die verhouding fokus nie, maar wat ook 'n positiewe kant insluit. Dit verwys na die proses waarvolgens deelname aan die een rol (bv. Werk-rol) vergemaklik word op grond van deelname aan die ooreenstemmende rol (bv. gesin-rol). Suid-Afrika is 'n multikulturele samelewing wat bestaan uit vier groepe (d.i. Swart, Wit, Kleurlinge en Indiërs), wat elf amptelike tale praat. Hierdie onderskeie inheemse groepe kom voor unieke en heeltemal verskillende omstandighede te staan. Behalwe vir kulturele, etniese en taal verskille, kan ander verskeidenheid elemente ook bestaan (bv. waardes en norme). Gevolglik kan Suid-Afrikaanse werknemers die positiewe kant van die werk/gesin-spektrum moontlik anders as werknemers oorsee ervaar. Tot dusver was dit nog nie duidelik hoe Suid-Afrikaanse werknemers die verryking tussen werk- en gesin domeine ervaar nie, en ook nie hoe hierdie ervaring met dié van werknemers in ander lande strook nie. Verder bestaan daar tot op hede ook geen Suid-Afrikaanse instrument wat die verryking tussen werk en gesin in beide rigtings meet nie. Hierdie leemte kan moontlike belemmerings inhou vir organisasies en vir toekomstige studies oor die positiewe werk/gesin-sy in Suid-Afrika.

Die navorsing in hierdie tesis se doelstellings was 1) om vas te stel hoe die positiewe sy van die werk/gesin spektrum gekonseptualiseer word – veral die konsep werk-gesinverryking; 2) om 'n nuwe instrument vir werk-gesinverryking te ontwikkel wat geskik sou wees vir die Suid-Afrikaanse konteks en wat kwessies oor meting en begripvorming kan hanteer wat vorige metingsinstrumente oor positiewe werk-gesinverhouding uitgewys het; 3) om vir die psigometriese eienskappe te toets en om die nuut ontwikkelde instrument geldig te bewys; en 4) om oorsake en gevolge van werk-gesinverryking onder werknemers in die Suid-Afrikaanse konteks vas te stel.

Die studie het uit vier fases bestaan. Gedurende die eerste fase is 'n teoretiese raamwerk vir die studie voorgestel, na aanleiding van 'n omvattende oorsig oor die positiewe sy van die werk/gesin spektrum. Daarna is die nuwe instrument, wat werk-gesinverryking meet, ontwikkel wat op die voorgestelde teoretiese raamwerk gebaseer is. Hierdie instrument is gemeet en getoets deur 'n loodstudie ($N = 527$), om sodoende sommige van die beperkings te oorkom waarmee van die vorige positiewe werk-gesin-instrumente te kampe gehad het. Die toets is opgevolg deur 'n ondersoek na die psigometriese eienskappe van die nuutontwikkelde MACE Werk-gesin Verrykingsinstrument (o.m. konstruk-, diskriminerings-, konvergensie- en eksterne geldigheid; $N = 627$). Tydens die laaste fase is die oorsake, werk-gesinverryking en gevolge van sodanige verryking onder werknemers in die Suid-Afrikaanse konteks getoets. In die 3de asook 4de fase van die studie is die volgende meetinstrumente (saam met die nuwe instrument) gebruik, naamlik die Werk-hulpbronnenskaal, Huis-hulpbronnenskaal, Utrecht se Werksbegeesteringskaal, Gesinbegeesteringskaal, Werksbevredigingskaal, Loopbaanbevrediging-skaal, Lewensbevredigingskaal, Gesinbevredigingskaal en die Werk-gesinverrykingskaal.

Tydens die eerste fase is 'n omvattende literatuurstudie onderneem oor die positiewe sy van die werk/gesin-spektrum. Die literatuur het getoon dat die positiewe sy van die werk/gesin spektrum deur verskeie konsepte aangedui is (o.m. werk-gesinverbetering, werk-gesinfasilitering, werk-gesin-positiewe oorspoel en werk-gesinverryking). Dit het verder getoon dat die konsep wat werk-gesinverryking uitdruk, tot op hede die enigste konsep van die positiewe werk/gesin spektrum is wat op 'n deeglik ontwikkelde gekonseptualiseerde teoretiese model gegrond is. Die grondliggende idee agter die model vir werk-gesinverryking is dat beide werk- en gesin domeine die individue voorsien van hulpbronne (bv. vaardighede en perspektiewe-, sielkundige en fisiese-, sosiale-kapitaal-, buigsaamheid- en materiële hulpbronne) wat van die een domein na die ander oorgedra kan word. Sodoende kan hierdie hulpbronne werknemers in die ooreenstemmende domein help deur die kwaliteit en prestasie of die individu se sielkundige toestand (affek) te verbeter. Hierdie hulpbronne vanuit die een rol bied die moontlikheid tot verbeterde prestasie in die ooreenstemmende rol, hetsy direk (bv. instrumentele rigting) of indirek (bv. affektiewe rigting).

Tydens die tweede fase is 'n nuwe verrykingsinstrument vir die werk-gesin tema ontwikkel, genaamd die MACE Werk-Gesin Verrykingsinstrument. Hierdie instrument is gebaseer op die voorgestelde teoretiese model oor werk-gesinverryking en geld vir beide rigtings (werk-

na-gesin en gesin-na-werk). Die aanvanklike ontwikkeling het 133 items ingesluit wat uit die bestaande literatuur geneem is, en 161 items wat self ontwikkel is. Tydens die evalueringstudie is verskeie problematiese items uitgeskakel deur die Rasch-metingsmodel in te span. Die derde fase het die valideringstudie ingesluit waar ondersoek ingestel is na die psigometriese eienskappe van die nuwe MACE Werk-Gesin Verrykingsinstrument. Die resultate het bewyse opgelewer vir konstruk-, diskriminerings- en konvergensiegeldigheid asook bewyse vir beduidende verbande met eksterne veranderlikes. Toepaslike betroubaarheid is ook gevind met die skale van die nuwe instrument. Die finale aantal items wat in die ontwikkeling en die loodstudie van die MACE Werk-Gesin Verrykingsinstrument behou is, was 34.

Gedurende die finale fase is verskeie verbande uitgewys tussen oorsake (bv. verskeie werke en huishulpbronne), dimensies van werk-gesinverrykings en gesin-werkverryking asook vir gevolge van hierdie verryking. Dit het ingesluit dimensies van werkbegeestering, en gesinbegeestering asook bevredigingsdimensies wat geld vir die werk, loopbaan, die lewe en gesinomgewing). Die resultate van hierdie verbande stem ooreen met vorige literatuurstudies oor die positiewe sy van die werk/gesinspektrum.

Hierdie studie lewer bewyse vir die psigometriese eienskappe van die nuwe MACE instrument wat navorsers en bestuurder kan benut om die spesifieke soort verryking te ondersoek wat werknemers in die Suid-Afrikaanse konteks tussen werk- en gesin domeine ervaar. Die resultate verskaf aan navorsers en bestuurders die insig in spesifieke oorsake (bv. werkhulpbronne) en gevolge (bv. werkbevrediging), wat 'n rol speel in werk-gesinverryking. Met hierdie insig kan bestuurders dan intervensies ontwikkel wat sodanige kwessies tans kan aanspreek.

Aanbevelings is ook met die oog op verdere navorsing gemaak.

TABLE OF CONTENTS

	Page
LIST OF TABLES	xiv
APPENDICES	xvi
SUMMARY	v
OPSOMMING	viii
CHAPTER 1: INTRODUCTION	1
1.1 PROBLEM STATEMENT	1
1.2 RESEARCH OBJECTIVES	10
1.2.1 General objective	10
1.2.2 Specific objectives	10
1.3 RESEARCH METHOD	12
1.3.1 Research design	12
1.3.1.1 Literature review	12
1.3.1.2 Empirical study	13
Phase 1: Positive side of the work/family interface: A theoretical review	13
1.3.1.2.1 Literature review	13
Phase 2: The development of the MACE Work-Family Enrichment Instrument	14
1.3.1.2.2 Scale development procedure	14
1.3.1.2.3 Research approach	15
1.3.1.2.4 Research participants and procedure	15
1.3.1.2.5 Statistical analysis	15
Phase 3: Psychometric properties and validation of the newly developed MACE Work-family Enrichment instrument	16
1.3.1.2.6 Research approach	16
1.3.1.2.7 Research participants and procedure	16

TABLE OF CONTENTS (continued)		Page
1.3.1.2.8	Measuring instruments	17
1.3.1.2.9	Statistical analysis	20
	Phase 4: Assessing work and home resources, work-family enrichment, engagement and satisfaction among employees in the South African context	22
1.3.1.2.10	Research approach	22
1.3.1.2.11	Research participants and procedure	22
1.3.1.2.12	Measuring instruments	23
1.3.1.2.13	Statistical analysis	26
1.4	ETHICAL CONSIDERATIONS	27
1.4.1	Potential benefits and hazards	27
1.4.2	Recruitment, sampling procedures and informed consent	27
1.4.3	Data protection	27
1.5	OVERVIEW OF CHAPTERS	28
1.6	CHAPTER SUMMARY	28
	REFERENCES	29
	CHAPTER 2: RESEARCH ARTICLE 1	37
	CHAPTER 3: RESEARCH ARTICLE 2	66
	CHAPTER 4: RESEARCH ARTICLE 3	105
	CHAPTER 5: RESEARCH ARTICLE 4	158
	CHAPTER 6: CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS	213
6.1	CONCLUSIONS	213
6.2	LIMITATIONS OF THIS RESEARCH	219

TABLE OF CONTENTS (continued)

	Page	
6.3	RECOMMENDATIONS	221
6.3.1	Recommendations to the organisation	221
6.3.2	Recommendations for future research	223
	REFERENCES	225

LIST OF TABLES

Table	Description	Page
Research Article 2		
Table 1	Differential item functioning analysis for the various sub-groups using the complete set of items for the work-to-family sub-scale	88
Table 2	Differential item functioning analysis for the various sub-groups using the complete set of items for the family-to-work sub-scale	88
Table 3	Test of individual item fit for the work-to-family sub-scale with items ordered by increasing location	89
Table 4	Test of individual item fit for the family-to-work sub-scale with items ordered by increasing location	90
Research Article 3		
Table 1	Characteristics of the Participants ($N = 627$)	117
Table 2	Goodness-of-fit statistics and chi-square difference tests of nested alternative work-to-family enrichment and family-to-work enrichment models	128
Table 3	Goodness-of-fit statistics for tests of discriminant validity for both the work-to-family enrichment and family-to-work enrichment instruments	131
Table 4	Product-moment correlation coefficients between MACE Work-Family Enrichment Instrument and those of the WFES of Carlson et al. (2006)	132
Table 5	Descriptive statistics and Cronbach's alpha coefficients	134
Table 6	Product-moment correlations for work resources, work-to-family enrichment dimensions and work engagement, job satisfaction and career satisfaction as outcomes	136
Table 7	Product-moment correlations for home characteristics, family-to-work enrichment dimensions and family engagement, life satisfaction and family satisfaction as outcomes	138

LIST OF TABLES (continued)

Table	Description	Page
Research Article 4		
Table 1	Background information of the participants ($N = 627$)	171
Table 2	Descriptive Statistics, Cronbach's alpha coefficients and product-moment correlations for work resources, work-to-family enrichment dimensions, work engagement, job satisfaction and career satisfaction	180
Table 3	Descriptive Statistics, Cronbach's alpha coefficients and product-moment correlations for home resources, family-to-work enrichment dimensions and family engagement, life satisfaction and family satisfaction	182
Table 4	Multiple Regression analysis with work vigour as dependent variable	184
Table 5	Multiple Regression analysis with work dedication as dependent variable	185
Table 6	Multiple Regression analysis with family vigour as dependent variable	186
Table 7	Multiple Regression analysis with family dedication as dependent variable	187
Table 8	Multiple Regression analysis with family absorption as dependent variable	188
Table 9	Multiple Regression analysis with job satisfaction as dependent variable	190
Table 10	Multiple Regression analysis with career satisfaction as dependent variable	191
Table 11	Multiple Regression analysis with life satisfaction as dependent variable	192
Table 12	Multiple Regression analysis with family satisfaction as dependent variable	193

APPENDICES

Page

APPENDIX A - Research Article 2

Table 1	Differential item functioning analysis for the various sub-groups using the complete set of items for the work-to-family sub-scale	232
Table 2	Differential item functioning analysis for the various sub-groups using the complete set of items for the family-to-work sub-scale	233
Table 3	Test of individual item fit for the work-to-family sub-scale with items ordered by increasing location	234
Table 4	Test of individual item fit for the family-to-work sub-scale with items ordered by increasing location	239
Figure 1	Threshold for the item MWF4	244
Figure 2	Category characteristics curves for the item SWF1	244
Figure 3	Category characteristics curves for the item PPWF 2	245
Figure 4	Item/person threshold distribution map	245
Figure 5	Item/person threshold distribution map	246
Figure 6	Response categories	246

APPENDIX B - Research Article 3

Table 1	MACE Work-Family Enrichment Instrument items	247
Table 2	MACE Family-Work Enrichment Instrument items	248
Competing models for work-family enrichment		
Figure 1	M1- Four-factor “theoretical” model	249
Figure 2	M2-One-factor model	250
Figure 3	M3-Three-factor model	251
Competing models for family-work enrichment		
Figure 4	M1- Four-factor “theoretical” model	252
Figure 5	M2-One-factor model	253
Figure 6	M3-Three-factor model	254

CHAPTER 1

Introduction

This thesis focuses on the work-family enrichment of employees in the South African context. More specifically, work-family enrichment is conceptualised within the framework of relevant theories. To achieve this, a work-family enrichment instrument is developed, evaluated and tested for internal validity (i.e. construct validity, reliability, discriminant validity and convergent validity) and external validity (i.e. relationship with theoretically relevant variables).

Chapter 1 focuses on the problem statement, research objectives, contribution that the study makes and the research methodology that was followed. Thereafter the ethical considerations are explained and an overview is given of the division of chapters.

1.1 Problem statement

Over the past few decades it has become evident that work and family are interrelated domains and is a complex phenomenon. This makes it a challenge to adjust work and personal life and thereby obtaining a workable balance of interaction between these domains. However, the interaction between these two domains has become more difficult due to the vast changes in the composition of the workforce and the nature of work as such. This is mainly due to several socio-demographic and economic trends in current society (Stevens, Minnote, Mannon, & Kiger, 2007). Firstly, the nature of work has intensified. More women and men are working longer hours which demand more mental and emotional effort from them in the workplace (Lewis & Cooper, 2005). Secondly, South Africa's workforce comprises more mothers in the workplace, together with an increase of women in general due to economic and ideological reasons. The current workforce includes dual-career couples, single parent households and fathers who are involved actively in parenting (Paoli, 1997; Polach, 2003; Schreuder & Theron, 2001). Thirdly, there were rapid advancements in technology and telecommunications (e.g. email, portable computers, and mobile phones) as well as globalisation of the economy. This makes it possible for employees to work longer hours, which places pressure on them to perform

job tasks to compete in a global market and keep even with their own economic demands (Burke, 2004; Geurts, Rutte, & Peeters, 1999; Lewis & Cooper, 2005; Polach, 2003).

Since South Africa's first democratic election in 1994, prominent transformations have occurred in the nature of work as such. In South Africa transformations were necessary not only to move towards democracy, but also to become internationally competitive in a globalised competitive world (Du Toit, 2000). The transformations that changed the nature of work, manifested in the following forms: increased domestic and international competition, restructuring, downsizing, outsourcing, cuts in government funding, changes in management style and structure, lay-offs, mergers, rapidly changing technology as well as demands for higher-quality products and services (Gillespie, Walsh, Winefield, Dua, & Stough, 2001).

Due to the above-mentioned demographic and structural changes and the transformations in the workforce, boundaries between work and family became increasingly blurred, which in turn have a significant impact on organisational functioning and the workforce itself. This condition places more pressure on employees as they struggle with heightened worldwide competition and more demanding customers in an environment where speed and cost have become paramount (Lewis & Cooper, 2005; O'Driscoll, Brough, & Kalliath, 2004). Due to these changes and transformations, employees may also find it complicated to combine their work and family obligations (Van Hooff, Geurts, Taris, & Kompier, 2005). Hence, some people can experience a certain degree of conflict from the one domain (e.g. work) transferred to the other (e.g. family).

Work and family have been considered separate domains. In addition, research on work-family interaction focused almost exclusively on the *negative* impact of work on the family situation (i.e. work-family conflict) (Barnett, 1998; Eby, Casper, Lockwood, Bordeaux, & Brinley, 2005). However, it seems that researchers have come to realise in recent years, that the work/family interface is a much broader concept, which also includes a positive side. This side can be conceptualised as work-family enhancement, work-family facilitation, work-family positive spillover and work-family enrichment (Frone, 2003; Greenhaus & Powell, 2006; Grzywacz & Marks, 2000; Kirchmeyer, 1992a, 1992b). This positive side refers to the process by which participation in one role (e.g. work role) is made better or easier by virtue of participation in the

other role (e.g. family role) (Frone, 2003). For example, fulfilling multiple roles in the work and family domains may produce resources (e.g. energy mobilisation, flexibility, moods, attitudes, values, skills acquisition, behaviours and greater self-esteem) that could enrich functioning in both spheres of life in a positive way (Crouter, 1984; Edwards & Rothbard, 2000; Greenhaus & Powell, 2006; Grzywacz & Marks, 2000). Thus, the activities and performance in one role energises employees to perform in the other role. This happens when the social support employees receive or the skills, behaviours, attitudes or positive mood they have acquired in one role are useful in the other (Crouter, 1984).

Research has also demonstrated that increased positive interaction between the work and family spheres is related to improved mental health and life satisfaction. This condition can include less marital conflict, decreased drinking behaviour, improved physical health and well-being, better parent-child interactions, higher self-esteem and better organisational outcomes such as job satisfaction, engagement and productivity (Frone, 2003; Grzywacz, 2000; Grzywacz & Marks, 2000; Stephens, Franks, & Atienza, 1997). By understanding the benefits of work and family roles, it will assist working men and women in their quest for greater satisfaction in life. This understanding will also help employers understand how to cultivate greater job satisfaction among their employees, hence improving individual and organisational performance in the work place. Therefore, it seems imperative from a current researcher's point of view to investigate the positive side of the work/family interface of employees.

Many researchers have examined the prevalence of antecedents (e.g. supervisory support, co-worker support, work satisfaction, family involvement, family support, parental overload, and family satisfaction) and outcomes (e.g. family satisfaction, job satisfaction, affective commitment and organisational citizenship behavior) of work/family interaction (Allen, 2001; Barnett, 1998; Bhargava & Baral, 2009; Frone, Russell, & Cooper, 1992; Greenhaus & Parasuraman, 1994; Hill, 2005; Jaga & Bagraim, 2011; Jaga, Bagraim, & Williams, 2013; Perry-Jenkins, Repetti, & Crouter, 2000; Voyandoff, 2005). In South Africa, several studies have begun to address measurement issues (e.g. Koekemoer & Mostert, 2010; Pieterse & Mostert, 2005; Rost & Mostert, 2007), as well as relationships with antecedents and outcomes of negative and positive interaction between the work and family domains (e.g. Koekemoer & Mostert,

2006; Mostert, 2006; Mostert, Cronjé, & Pienaar, 2006; Mostert & Oosthuizen, 2006). However, within South African literature on the topic, little information is available on the experience of positive interaction between the worker role and the family role. Poelmans (2001) points out that a lack of empirical studies of this phenomenon exists across cultures and especially in South Africa.

South Africa as a multicultural society is faced with unique and different circumstances. This context may exist due to different cultural backgrounds, values, norms and ethnicities among various South African groups (Lewis, 1997). Because of these differences, various cultural groups may experience and influence the interaction between work and family differently from each other, as well as from other countries. According to Lewis (1997), countries can vary noticeably in cultural norms and values, gender-role beliefs and personal life interaction. Therefore, the positive side of the work/family interface can be viewed as an even more complex phenomenon in South African workplaces. Within South Africa the cultural assumptions, values, norms and artefacts of workers could differ from those of other workers (Lewis, 1997) and could therefore influence the positive side of the work/family interface quite differently. It can then be argued that because of these differences, South African workers could experience the positive side of the work/family interface in different ways and this positive side can manifest differently in various demographic groups. Therefore it seems imperative to investigate how employees in South Africa experience the positive side of the work/family interface.

Another problem facing researchers in South Africa is the suitability of measuring instruments from other countries. This becomes problematic since South Africa is a multicultural society and organisations employ individuals from diverse backgrounds. The use of measuring instruments from other countries covering the positive side of the work/family interface poses several problems. Virtually all instruments that focus on this topic, measure work-family and family-work interaction and the negative spillover effect of one domain to the other (Carlson, Kacmar, & Williams, 2000; Koekemoer & Mostert, 2010; Netemeyer, Boles, & McMurrin, 1996; Stephens & Sommer, 1996). Instruments that also measure positive interaction between both domains are largely absent (Geurts & Demerouti, 2003). In other countries two scales were developed for the positive side of the work/family interface namely, the Multi-dimensional Scale

of Perceived Work-Family Positive Spillover (Hanson, Hammer, & Colton, 2006) and the Work-Family Enrichment Scale (Carlson, Kacmar, Wayne, & Grzywacz, 2006).

The Multi-dimensional Scale of Perceived Work-Family Spillover is developed to measure positive spillover. This entails the transfer of positively valenced affect, skills, behaviours, and values from the originating domain to the receiving domain, thus benefitting the receiving domain (Hanson *et al.*, 2006). However, a limitation of this scale is that it was developed for studies without rigorous scale development and thorough validation procedures (Carlson *et al.*, 2006). Furthermore, the Work-Family Enrichment Scale is a self-reported measurement of enrichment that captures the extent to which resource gains that were experienced in one domain are transferred to another domain in ways that result in improved quality of life in one role for the individual (Carlson *et al.*, 2006). Carlson *et al.* (2006) based their measuring instrument on Greenhaus and Powell's (2006) conceptualisation of enrichment. However, the measuring instrument of Carlson *et al.* (2006) ended up measuring only three resources from work-to-family (i.e. development, affect, and capital) and three resources from family-to-work (i.e. development, affect, and efficiency). Thus the scale did not include all the resources (i.e. skills and perspectives, psychological and physiological resources, social-capital resources, flexibility, and material resources) gained as described by Greenhaus and Powell's (2006) theoretical model. Nevertheless, the scale of Carlson *et al.* (2006) may prove to be an acceptable measure of work-family enrichment, even if it does not capture all the resources outlined by Greenhaus and Powells' (2006) model. In South Africa however, there is an absence of an instrument to measure the positive interaction between work and family roles, therefore it seems necessary to develop such a measuring instrument.

One notable exception among the various measuring instruments that was developed for the work/family interface in South Africa is the Survey Work-Home Interaction-Nijmegen (SWING) (Geurts *et al.*, 2005). This theory-based instrument measures both the direction of influence (work-to-non-work vs. non-work-to-work interaction), as well as the quality of influence (positive vs. negative) in a person's life. However, this instrument only focuses on the interaction between the work and family domain and little is known about the interaction of work and family domains as well as the positive spillover of these domains. The SWING has indeed been proven

to be valid, reliable, unbiased and equivalent in some South African samples (Mostert & Oldfield, 2009; Pieterse & Mostert, 2005; Rost & Mostert, 2007). Nevertheless, it should be taken into account that, as mentioned previously, South Africa is faced with exceptional conditions in which cultural assumptions, values, norms and artefacts of employees could differ from each other. Due to these differences, it may influence the positive work/family interface in a different way or manifest in a different way than in other countries. Therefore it is necessary to develop a new measuring instrument that is valid, equivalent, unbiased and reliable for the unique South African context. The development and validation of such an instrument will facilitate researchers' understanding of the integration of the work and family roles among South African employees, as well as the benefits that can be derived from this integration.

In developing a new measuring instrument it is imperative to base it on a proper theoretical framework (Wayne, Randal, & Stevens, 2003). However, it is apparent that the existing measures for the positive work/family interface were developed with a lack of consistency in conceptualisation of the construct (Brockwood, Hammer, & Neal, 2003; Voydanoff, 2004). Furthermore, measuring instruments from the positive side of the work/family interface were also developed without rigorous scale development and thorough validation procedures (Brockwood *et al.*, 2004). Consequently, such measures suffer from poor reliability and validity and may not measure the construct of interest adequately enough. According to DeVellis (1991) it is crucial to use measuring instruments that shows evidence of validity and reliability and that are psychometrically sound, since these requirements hold various implications for relationships with other variables and its validity. Therefore the need is to develop a new measuring instrument that is based on a sound theoretical framework and also tested to be reliable and valid.

As the literature suggested, the positive side of the work/family interface can be validated in a number of ways (i.e. internal validity and external validity). However, the reporting and use of this interface is inconsistent across the different studies (Carlson *et al.*, 2006; Carlson, Ferguson, Kacmar, Grzywacz, & Whitten, 2011; Carlson, Grzywacz, & Kacmar, 2010; Fisher, Bulger, & Smith, 2009; Hanson *et al.*, 2006; Holbrook, 2005; Sumer & Knight, 2001). One of the major psychometric properties that is reported across studies on developing positive work-family measurements is the use of construct validity (Dyson-Washington, 2006; Masuda, McNall,

Allen, & Nicklin, 2012; Wayne, Musisca, & Fleeson, 2004). Some studies used exploratory-factor analysis to establish the validity of a construct (Carlson *et al.*, 2006; Hanson *et al.*, 2006; Holbrook, 2005; Sumer & Knight, 2001), whilst others use confirmatory-factor analysis (Carlson *et al.*, 2006; Fisher *et al.*, 2009; Geurts *et al.*, 2005; Hanson *et al.*, 2006; Holbrook, 2005).

In addition to construct validity, discriminant validity may also be used as an indicator to determine the psychometric properties of a measuring instrument. However, only a few studies on the positive work/family interface tested or provided evidence for discriminant validity (i.e. Carlson *et al.*, 2006, 2010, 2011; Fisher *et al.*, 2009). Furthermore, a measuring instrument's validity can also be determined by a measurement that correlates highly with other variables with which it should theoretically correlate (Foxcroft & Roodt, 2013 – also known as convergent validity). Only Carlson *et al.* (2006) and Fisher *et al.* (2009), reported that they tested for convergent validity regarding measures from the positive side of the work/family interface. As for external validity (relationship with antecedents and outcomes), some studies used product-moment correlations to indicate external validity (i.e. Carlson *et al.*, 2006; Geurts *et al.*, 2005; Hanson *et al.*, 2006; Holbrook, 2005; Kirchmeyer, 1992a), whilst others used multiple regressions to indicate these relationships (i.e. Jaga & Bagraim, 2011; Jaga *et al.*, 2013; Kirchmeyer, 1992a).

Within South Africa limited research has been done on the relationship between antecedents and outcomes related to work-family enrichment (e.g. Jaga & Bagraim, 2011; Jaga *et al.*, 2013). For example, the findings of Jaga and Bagraim (2011) revealed that career satisfaction and job satisfaction was significant outcomes of work-to-family enrichment and that family satisfaction was a significant outcome for family-to-work enrichment. The relationship between work-family enrichment and outcomes to some extent has been researched within the South African context (e.g. Jaga & Bagraim, 2011; Jaga *et al.*, 2013). However, more research is needed on the relationship of work-family enrichment with antecedents and outcomes. Such research will provide a more comprehensive understanding of the positive side of the work/family interface in the South African context.

It is evident from the above-mentioned discussion that it is important to investigate the enrichment of South African employees' work and family lives in context. It is also clear that there is a need to develop and evaluate a new instrument, based on a sound theoretical framework derived from the positive side of the work/family interface for the South African context.

Therefore, the following research questions flowed from the above-mentioned research problem. The research to address these questions is presented in article form:

Article 1:

- How is the positive side of the work/family interface conceptualised according to the literature?
- Can a theoretical framework be identified from the literature, on which to base future studies regarding the positive side of the work/family interface?
- How is the theoretical framework and its components conceptualised according to the literature?
- What recommendations could be made for further research and measurement to enhance the positive side of work/family interface?

Article 2:

- Can a new comprehensive work-family enrichment instrument be developed that is suitable for the South African context and based on the model proposed by Greenhaus and Powell (2006)?
- Is it possible to measure all five dimensions of work-family enrichment as proposed by the model of Greenhaus and Powell (2006)?
- Is it possible to test the items' performance of the newly developed measuring instrument, by conducting bias and equivalence studies?

Article 3:

- What is the internal validity (i.e. construct validity, reliability, discriminant validity and convergent validity) of the newly developed work-family enrichment instrument?

- What is the external validity (i.e. relationships between theoretically relevant external variables) of the newly developed work-family enrichment instrument?

Article 4:

- What is the relationship between the dimensions of work-to-family enrichment, work resources, work engagement, job satisfaction and career satisfaction?
- What is the relationship between the dimensions of family-to-work enrichment, home resources, family engagement, family satisfaction and life satisfaction?
- Which dimensions of work resources and work-to-family enrichment predict the dimensions of work engagement, job satisfaction and career satisfaction?
- Which dimensions of home resources and family-to-work enrichment predict the dimensions of family engagement, family satisfaction and life satisfaction?

This research makes the following contributions to the subject field of Industrial Psychology and the practice of this discipline in organisations:

- Current conceptualisation and measurement issues were addressed covering the positive side of the work/family interface. In order to understand the importance of the positive side of the work/family interface better, a definition and theoretical framework was proposed.
- This resulted in a newly developed work-family enrichment instrument with items that capture the different dimensions of enrichment for employees within the South African context and thereby also deal with previous measurement limitations.
- It resulted in a psychometrically sound measuring instrument that scientifically has been proven to be valid and reliable for the South African context, with evidence of internal and external validity.
- Measuring the work-family enrichment of employees improves knowledge and understanding of workers' work-family enrichment experiences. Therefore, this measuring instrument can be useful in identifying workers' experience of enrichment in both domains.

- The present study results in a measuring instrument that enables both practitioners and researchers to understand the enrichment experiences of employees' work and family lives
- The study leads to a measuring instrument that enables the employee/individual to identify his/her own experience of enrichment between the work and family environment.

1.2 Research objectives

The research objectives are divided into general objectives and specific objectives flowing from it.

1.2.1 General objective

With reference to the above mentioned formulation of the problem, the general objectives of this research are to 1) determine how the positive side of the work/family interface, specifically work-family enrichment, is conceptualised according to the literature; 2) to develop a new instrument for work-family enrichment that is suitable for the South African context and that addresses conceptual and measurement issues encountered by previous positive work/family interface measures; 3) to investigate the psychometric properties of the newly developed work-family enrichment instrument; and 4) to assess antecedents and outcomes of work-family enrichment among employees within the South African context.

1.2.2 Specific objectives

The specific objectives of this research are presented in article form:

Article 1:

- Determine how the positive side of the work/family interface is conceptualised according to the literature.
- Determine whether a theoretical framework can be identified from the literature, on which to base future studies regarding the positive side of the work/family interface.

- Determine how the theoretical framework and its components are conceptualised according to literature.
- Determine which recommendations could be made for further research and measurement when referring to the positive side of work/family interface.

Article 2:

- Determine whether a new comprehensive instrument for work-family enrichment that is suitable for the South African context can be developed, based on the model proposed by Greenhaus and Powell (2006).
- Establish if it is possible to measure all five dimensions of work-family enrichment as proposed by the model of Greenhaus and Powell (2006).
- Test the possibility for items' performance of the newly developed measuring instrument, by conducting bias and equivalence studies.

Article 3:

- Evaluate the internal validity (i.e. construct validity, reliability, discriminant validity and convergent validity) of the newly developed work-family enrichment instrument.
- Investigate the external validity (i.e. relationships between theoretically relevant external variables) of this newly developed instrument.

Article 4:

- Investigate the relationship between the dimensions of work-to-family enrichment, work resources, work engagement, job satisfaction and career satisfaction.
- Investigate the relationship between the dimensions of family-to- work enrichment, home resources, family engagement, family satisfaction and life satisfaction.
- Determine which dimensions of work resources and work-to-family enrichment predict the dimensions of work engagement, job satisfaction and career satisfaction.
- Determine which dimensions of home resources and family-to-work enrichment predict the dimensions of family engagement, family satisfaction and life satisfaction.

1.3 Research method

The research method consists of a literature review and a description of the empirical study for each phase. The results are presented in the form of four research articles. For the purpose of each article, a short literature review is presented to give an overview of the current state of the research on the positive side of the work/family interface. The first phase consists of a thorough literature review on the positive side of the work/family interface. The second, third and fourth phases used a quantitative design. The goal of each phase is as follows:

- **First phase:** Explore the literature on the positive side of the work/family interface and identify a proper framework on which the research can be based.
- **Second phase:** Develop the work-family enrichment measuring instrument for the South African context.
- **Third phase:** Determine the psychometric properties of the newly developed work-family enrichment instrument.
- **Fourth phase:** Assess the relationship between antecedents, work-family enrichment and outcomes.

1.3.1 Research design

The research method consists of a literature review and an empirical study (quantitative research).

1.3.1.1 Literature review

The research design for each of the three quantitative research articles consists of a literature review and an empirical study. The first chapter (phase 1) consist exclusively of a literature review done on the positive side of the work/family interface to gain a better insight into the concept. As mentioned above, a thorough literature study was conducted for each of the research articles. These literature reviews are done by means of research databases such as Academic Search Premier, EBSCO Host, Science Direct, PsychInfo, ERIC, Google Scholar, Interlibrary

loans, and the North-West University Library (Ferdinand Postma, Potchefstroom campus). The search terms include the following: work-family positive spillover, work-family enhancement, work-family facilitation, work-family enrichment, work-family enrichment theory, scale development, Rasch analysis, construct validity, discriminant validity, reliability, convergent validity, Confirmatory Factor Analysis (CFA), work resources, home resources, engagement and satisfaction.

1.3.1.2 Empirical study

The empirical study in this thesis consisted of three phases, each with its own empirical study. In the second phase, the definition of work-family enrichment is proposed, as well as a theoretical framework for understanding work-family enrichment based on the literature review done in phase one. A new measuring instrument is developed and evaluated to measure the work-family enrichment of employees. The third phase entails the validation of the new instrument, where the psychometric properties of the newly developed work-family enrichment is examined (i.e. construct validity, reliability, discriminant validity, convergent validity and external validity). During the fourth and last phase of this study, antecedents and outcomes for work-family enrichment are assessed. The empirical study of all the phases comprised the research design, the participants and procedures, data gathering and statistical analysis.

Phase 1 (Article 1): Positive side of the work/family interface: A theoretical review

The research method of phase 1 consists of a literature review.

1.3.1.2.1 Literature review

During the first phase of the study, a literature review is done on concepts of the positive side of the work/family interface research. There are focused on concepts such as work-family enhancement, work-family facilitation, work-family positive spillover and work-family enrichment. Furthermore, a review on the theories of the positive side of the work/family interface is also conducted, specifically on the work-family enrichment model. This model is

employed as a theoretical framework as it is the only concept to date that has a sound theoretical model (Greenhaus & Powell, 2006). The literature review not only focused on the conceptualisation of the positive side of the work/family interface, but also on relevant information regarding the measurement of the positive side of the work/family interface.

Phase 2 (Article 2): The development of the MACE Work-Family Enrichment Instrument

1.3.1.2.2 Scale development procedure

During the second phase of the study, the MACE Work-Family Enrichment Instrument is developed. The procedure used to develop the new instrument adhered closely to the four-step procedure of DeVellis (1991):

- **Step 1:** To conceptualise the work-family enrichment construct based on relevant theory and information.
- **Step 2:** Consist of an item pool in which items are generated from existing measuring instruments. These items then are adapted and new items developed based on the definition of work-family enrichment.
- **Step 3:** Evaluations are done regarding the utility of the items for the new measuring instrument. Items that are highly redundant in terms of wording with other items will be removed to reduce the likelihood of within-factor correlated measurement error (Netemeyer *et al.*, 1996).
- **Step 4:** Item refinement and selecting the relevant items for the new work-family enrichment measuring instrument.

During the development of the MACE Work-Family Enrichment Instrument, an evaluation study is conducted, to refine the measure by eliminating undesirable items and retain desirable items for further validation.

1.3.1.2.3 Research approach

The current study followed a quantitative research approach with a methodology aimed at developing a new scale to gather work-family enrichment data and validate the instrument through a pilot study (see Mouton, 2001). The research entails an empirical study that uses primary numerical data gathered from natural field settings by means of a survey (see Mouton, 2001). The specific survey design used is the cross-sectional design.

During a cross-sectional design one group of people is observed at one point in time, in a short period, such as a day or a few weeks (Du Plooy, 2002). One advantage of cross-sectional research is that it is more economical than other designs in terms of time and cost. A disadvantage of cross-sectional designs is the inability to assess intra-individual change directly and the restriction of its interference (Baltes, Reese, & Nesselrode, 1988).

1.3.1.2.4 Research participants and procedure

The MACE Work-Family Enrichment Instrument is administered by a group of postgraduate students to a combined purposive and convenience non-probability sample of employees working in the South African context ($N = 527$). To be included in this sample, participants needed to have a permanent occupation and should have been employed full-time; and they should be involved in a family life. The survey booklet included a section explaining the research purpose and the accompanying process. Fieldworkers also related a standard introduction and orientation about the rationale of the research study to the participants. Participants are informed that their participation in the research project is voluntary. They are also informed that if they participated in the research and completed a questionnaire, then they have acceded their consent to the researcher to use the data for research purposes only.

1.3.1.2.5 Statistical analysis

The Rasch analysis is conducted utilising the Rasch Uni-dimensional Measurement Model 2030 (RUMM 2030) program (Andrich & Sheridan, 2009). The thresholds are used for each item in

the response categories, to determine whether the item is working according to expectation. Item location and fit to the model are used to locate evidence of possible misfit. Additionally, the Person Separation Index (PSI) is used to investigate the reliability of the scales. Item/person threshold distribution was used. Differential Item Functioning (DIF) is carried out and the different groups within the sample were compared with amongst each other to determine whether the items of the work-to-family enrichment (WFE) direction and that of the items from the family-to-work enrichment (FWE) direction have the same meaning across sub-groups. Local item independence is used to evaluate the items by inspecting the residual correlation output. Item location and fit of the items to the subscales were tested separately on the different subscales to locate evidence of misfit.

Phase 3 (Article 3): Psychometric properties and validation of the newly developed MACE Work-Family Enrichment Instrument

During phase 3, the psychometric properties of the MACE Work-Family Enrichment Instrument are investigated.

1.3.1.2.6 Research approach

The research objectives are obtained using a cross-sectional survey design. A cross-sectional survey design measures all the variables simultaneously (Blaikie, 2003) and is applied in studies occurring at a single point in time (Keppel, Saufley, & Tokunaga, 1992). This design is also used to assess interrelationship among variables within a population (Struwig & Stead, 2001).

1.3.1.2.7 Research participants and procedure

The present study aimed to prove the validity and reliability of a newly developed MACE Work-Family Enrichment Instrument. Since the study is not about determining specific occupational groups' characteristics, but rather about testing the reliability and validity of a newly developed instrument, a combined purposive and convenience non-probability sample was used. Employees ($N = 627$) in various industries in South Africa are included in the sample. The proposed

research is presented to the Research Committee of the University, and after ethical clearance was obtained by the university's Ethics Committee, test booklets are compiled that contained all the relevant questionnaires. A letter requesting participation and consent from the participants as well as an explanation of the ethical aspects and a motivation of the importance of the research are included in the test booklet. Furthermore, assurances are also included in the letter accompanying the test booklet to participants on the anonymity and confidentiality with which the information is being handled. With the help of field workers, questionnaires are distributed personally to the employees. Participants are given two to three weeks to complete the questionnaires. They are also provided several options for returning the questionnaires to the researchers (e.g. personal collection and electronic mail).

1.3.1.2.8 Measuring instruments

The MACE Work-Family Enrichment Instrument as well as other measuring instruments are utilised in the study.

Work resources: Three work resources are measured, namely *work autonomy*, *work support* and *work-related developmental possibilities*. *Autonomy* and *support* are each measured with three items of the scale developed by Bakker, Demerouti and Verbeke (2004). Examples of the items are: "How often does it happen that you have a say in decisions that affect your work?" or: "How often does it happen that you can count on your colleagues when you have difficulty in your work?" *Work-related developmental possibilities* were measured with three items that conceptually mirrored the scale of home-related developmental possibilities developed by Demerouti, Bakker and Voydanoff (2009). With an example item: "How often does it happen that at your work, you have the opportunity to develop your strong points?" All the items for the three work resources are rated on a four-point Likert scale ranging from 0 (*never*) to 3 (*always*). Previous studies did indicate reliable Cronbach's alpha coefficients that ranged between 0.68 and 0.74 for autonomy, and between 0.81 and 0.85 for support (Bakker *et al.*, 2004; Bakker, Demerouti, & Euwema, 2005).

Home resources: Three home resources are measured, namely *home autonomy*, *home support* and *home-related developmental possibilities*. These home resources are developed by Demerouti *et al.* (2009) and conceptually mirror existing scales of job resources, since several scholars have successfully used a job-related measure as a model for constructing a symmetrical home-related measure (Frone, & Rice, 1987; Frone *et al.*, 1992; Parasuraman, Purohit, Godshalk, & Beutell, 1996). *Home autonomy* and *home support* are each measured with four items (e.g. “How often does it happen that you decide for yourself how you spend your leisure time?” or “How often does it happen that your partner or family members show that they value you for the work you do at home?”). *Home-related developmental possibilities* are measured with three items (e.g. “How often does it happen that in your free time you have the opportunity to develop yourself?”). All these items for home resources are rated on a four-point Likert scale ranging from 0 (*never*) to 3 (*always*).

Work-Family Enrichment Scale: The scale of Carlson *et al.* (2006) is used to measure the dimensions of the work-to-family enrichment and family-to-work enrichment. Two dimensions are reflected in each direction of enrichment: Work-to-family: WF Development (three items), WF Affect (three items); Family-to-work: FW Development (four items), FW Affect (three items). An item for example from work-to-family scale is: “My involvement in work helps me to understand different viewpoints and this helps me be a better family member”; and an item for example from the family-to-work scale is: “My involvement in my family makes me feel happy and this helps me be a better worker”. Respondents indicate their levels of agreement to each statement on a five-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Reliable Cronbach’s alpha coefficients are found, for work-to-family enrichment it was 0.88 and family-to-work enrichment it was 0.84 (Bhargava & Baral, 2009).

Satisfaction: Four types of satisfaction are measured, namely job, career, life and family satisfaction.

Job satisfaction is measured with three items which were developed by Hellgren, Sjöberg, and Sverke (1997). A sample item is: “I enjoy being at my job”. The response alternatives ranged

from 1 (*disagree*) to 5 (*agree*). High Cronbach's alpha reliability coefficients are reported by Hellgren *et al.*, (1997), $\alpha = 0.88$.

Career satisfaction is measured with four items of the scale developed by Greenhaus, Parasuraman and Wormley (1990). A sample item is: "In general, I like my career". The responses are measured on a five-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) (5). Cronbach's alpha reliability for this scale as reported by Greenhaus *et al.* (1990) are $\alpha = 0.88$.

Life satisfaction is measured with only four items of the five-item scale from the Satisfaction with Life Scale (SWLS, Diener, Emmons, Larson, & Griffin, 1985). Examples of the four items, are: "So far I have gotten the important things I want in life." and "In most ways my life is close to my ideal". Items are rated on a seven-point scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Diener *et al.* (1985) found the scale to be reliable and valid with an alpha coefficient of 0.87 and a test-retest reliability of $\alpha = 0.82$.

Family satisfaction is measured with a four-item scale developed by Greenhaus *et al.* (1990). A sample item is: "In general, I like my family life". The responses are measured on a five-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach's alpha reliability for this scale as reported in a study by Dyson-Washington (2006) are high, $\alpha = 0.92$.

Engagement: Two types of engagement are used namely work engagement and family engagement.

Work Engagement: The Utrecht Work Engagement Scale (UWES) (Schaufeli Salanova, Gonzalez-Roma, & Bakker, 2002) is used in this study. Only eight items of the 17-item scale are used, consisting of two scales; *work vigour* (four items), and *work dedication* (four items). Examples of statements are: "At my work, I feel bursting with energy"; and "At my job, I feel strong and vigorous" (Schaufeli *et al.*, 2002). The instrument is scored on a seven-point frequency rating varying from 1 (*never*) to 7 (*every day*). In a study conducted by Storm (2002)

among the South African Police Service, the following alpha coefficients are achieved on the dimensions: work vigour = 0.78 and work dedication = 0.89.

Family Engagement: The 17-item UWES scale is adapted to measure the levels of family engagement with specific focus on three dimensions, namely family vigour, family dedication and family absorption. This 12-item adapted scale has three scales, which were *family vigour* (five items), *family dedication* (three items) and *family absorption* (four items). Examples of statements are: “I am enthusiastic about spending time with my family”; “When I am with my family, I forget everything else around me” and “With my family I feel energised”. The instrument is scored on a seven-point frequency rating varying from 1 (*never*) to 7 (*every day*).

1.3.1.2.9 Statistical analysis

In order to prove construct validity of the newly developed instrument a comprehensive test of the hypothesised and alternative models are carried out through Structural Equation Modelling (SEM) methods, as implemented by AMOS (Arbuckle, 2011). Confirmatory factor analysis (CFA) is used to examine the construct validity of the newly developed questionnaire through the AMOS structural modelling software (Arbuckle, 2011).

The χ^2 and several other goodness-of-fit indices are used to summarise the degree of correspondence between the implied and observed covariance matrices. The following goodness-of-fit indices are used as adjuncts to the likelihood-ratio chi square (χ^2) statistics: 1) ratio of the chi square to the degrees of freedom (χ^2/df); 2) the root square of approximation (RMSEA); 3) The Comparative Fit Index (CFI); 4) Tucker-Lewis Index (TLI) and 5) the Incremental Fit Index (IFI). The CFI, TLI and IFI are used since the likelihood ratio chi square (χ^2) is sensitive to sample size – i.e. the probability of rejecting a hypothesised model increases with sample size (Bentler, 1990). Acceptable fit of the model is indicated by non-significant χ^2 values, values smaller than or equal to 0.90 for CFI, TLI and IFI, also RMSEA values smaller than or equal to 0.08 (Browne & Cudeck, 1993) and $\chi^2/df < 5.00$ (Bentler & Bonett, 1980).

Following the construct validity of the instrument, discriminant validity is assessed. Discriminant validity is examined by constraining the estimated correlation parameter between two estimated constructs to 1.0, then using a chi-square (χ^2) difference test on the values obtained for the constrained and unconstrained models (Anderson & Gerbing, 1988). If the chi-square (χ^2) difference test of the unconstrained model is greater than the chi-square (χ^2) difference test of the constrained models, it indicates satisfactory discriminant validity (Wixom & Todd, 2005). Also, if the unconstrained model and the constrained models do not differ significantly on a chi-square difference test, discriminant validity does not exist.

In addition to construct validity and discriminant validity, convergent validity needs to be measured. The SPSS program (IBM SPSS Statistics 20, 2013) is used to assess convergent validity. Convergent validity is determined by examining the correlation coefficients between various dimensions of the newly developed work-family enrichment instrument and the work-family enrichment scale (WFES) of Carlson *et al.* (2006). After validity of the newly developed instrument is proved, the reliability of the newly developed instrument is determined by using Cronbach's alpha coefficients.

In addition, descriptive statistics (i.e. means and standard deviations) are also used to describe the data. Finally, product-moment correlation coefficients are used to determine the relationships between the subscales of the newly developed instrument and selected external variables (i.e. work engagement, job satisfaction, career satisfaction, family engagement, life satisfaction, family satisfaction). In terms of statistical significance it is decided to set the value at a 95% confidence interval level ($p < 0.05$). Because statistical significance may show results that are practically of little relevance, effect sizes were used to determine the practical significance of the relationship (Cohen, 1988; Steyn, 2002). The cut-off point for practical significance of the correlation coefficients are set at 0.30 (medium effect) and 0.50 (large effect) (Cohen, 1988).

Phase 4 (Article 4): Assessing work and home resources, work-family enrichment, engagement and satisfaction among employees in the South African context

During phase 4, the relationships of the newly developed instrument with work and home resources, engagement and satisfaction are assessed.

1.3.1.2.10 Research approach

For the purpose of this study a cross-sectional survey design is utilised, in which data is collected at one point in time. A cross-sectional survey design measures all the variables simultaneously (Blaikie, 2003) and is used to assess interrelationship among variables within a population (Struwig & Stead, 2001). Therefore this design is suitable for the study.

1.3.1.2.11 Research participants and procedure

The target population consisted of a combined purposive and convenience non-probability sample ($N = 627$) of employees working in various industries in South Africa. The aim is to include a diverse group of participants which are representative of the South African population demographics and only employed participants, who also have a family life, are included in the sample. With the help of field workers, questionnaires are distributed personally to the employees and participants are given two to three weeks to complete the questionnaires. A letter requesting participation is included in the test books, as well as an explanation of ethical aspects and a motivation of the importance of the research. Furthermore, assurances are given in the letter to participants on the anonymity and confidentiality with which the information would be handled. Field workers distribute questionnaires to the employees working at various industries. These participants are given various options for returning the questionnaires to the researcher.

1.3.1.2.12 Measuring instruments

Measurements are utilised that investigating the antecedents, work-family enrichment and outcomes. A description of the measurements is given below:

Work resources: Three work resources are measured: *autonomy*, *support* and *work-related developmental opportunities*. These three work resources items are rated on a four-point Likert scale ranging from 0 (*never*) to 3 (*always*). *Autonomy* is measured with the scale developed by Bakker *et al.* (2004) (three items, e.g. “How often does it happen that you have a say in decisions that affect your work?”). *Support* is measured with the scale developed by Bakker *et al.* (2004) (three items, e.g. “How often does it happen that you can count on your colleagues when you have difficulty in your work?”). *Work-related developmental opportunities* are assessed by three items that was conceptually mirrored from existing scales of home developmental possibilities developed by Demerouti *et al.* (2009). An example item is: “How often does it happen that at your work, you have the opportunity to develop your strong points?” Reliable Cronbach’s alpha coefficients are found that ranged between 0.68 and 0.74 for *autonomy*, and between 0.81 and 0.85 for *support* (Bakker *et al.*, 2004; Bakker *et al.*, 2005).

Home resources: The home resources are developed by Demerouti *et al.* (2009) and conceptually mirror existing scales of job resources, since several scholars have successfully used a job-related measure as a model to construct a symmetrical home-related measurement (Frone & Rice, 1987; Frone *et al.*, 1992; Parasuraman *et al.*, 1996). All these home resources items are rated on a four-point Likert scale ranging from 0 (*never*) to 3 (*always*). *Home autonomy* is tested with four items, e.g. “How often does it happen that you decide for yourself how you spend your leisure time?” *Home support* is measured with four items such as “How often does it happen that your partner or family members show that they value you for the work you do at home?” *Home-related developmental opportunities* are assessed by three items such as “How often does it happen that in your free time you have the opportunity to develop yourself?”

Work-Family Enrichment instrument: The 34-item MACE Work-Family Enrichment Instrument (De Klerk, Nel, Hill, & Koekemoer, 2013) is used to measure dimensions of work-to-

family enrichment and family-to-work enrichment. Work-to-family enrichment dimensions consists of work-family perspectives (six items; i.e., “My family life is improved by my work showing me different viewpoints”), work-family affect (three items; i.e., “My family life is improved by my work that puts me in a good mood”), work-family time management (six items; i.e., “My family life is improved by managing my time at work”), and work-family socio-capital (three items; i.e., “My family life is improved by maintaining good relationships with my colleagues”). Family-to-work enrichment dimensions consists of family-work perspectives (five items; i.e., “My work is improved by the skills I learn in my family life”), family-work affect (five items; i.e., “My work is improved by being optimistic about my family life”), family-work time management (three items; i.e., “My work is improved by keeping a sufficient pace in my family life”) and family-work socio-capital (three items; i.e., “My work is improved by being supportive in my family life”). Respondents indicated their levels of agreement to each statement on a four-point scale: 1 (*Disagree*), 2 (*Neither agree nor disagree*) 3 (*Agree*) and 4 (*Strongly agree*). Reliable Cronbach’s alpha coefficients are found: work-family perspectives = 0.91, work-family affect = 0.84, work-family time management = 0.90, work-family socio-capital = 0.80, family-work perspectives = 0.89, family-work affect = 0.89, family-work time management = 0.83, and family-work socio-capital = 0.78 (De Klerk *et al.*, 2013).

Engagement: *Work Engagement:* The Utrecht Work Engagement Scale (UWES) (Schaufeli *et al.*, 2002) is used in the present study. Only eight items of the 17-item scale are used, consisting of two scales: *work vigour* (four items), and *work dedication* (four items). Examples of statements are: “At my work, I feel bursting with energy” and “At my job, I feel strong and vigorous” (Schaufeli *et al.* 2002). The instrument is scored on a seven-point frequency rating varying from 1 (*never*) to 7 (*every day*). In a study conducted by Storm (2002) among the South African Police Service the following alpha coefficients are achieved on the dimensions: work vigour = 0.78 and work dedication = 0.89.

Family Engagement: The 17-item UWES scale is adapted to measure the levels of family engagement with specific focus on three dimensions, namely family vigour, family dedication and family absorption. This 12-item adapted instrument has three scales, which are *family vigour* (five items), *family dedication* (three items) and *family absorption* (four items). Examples of

statements are: “I am enthusiastic about spending time with my family”; “When I am with my family, I forget everything else around me” and “With my family I feel energised”. The instrument is scored on a seven-point frequency rating varying from 1 (*never*) to 7 (*every day*).

Satisfaction: *Job satisfaction:* Three items developed by Hellgren *et al.* (1997), based on Brayfield and Rothe (1951) are used to measure job satisfaction. The response alternatives ranges from 1 (disagree) to 5 (agree), where a high score reflects satisfaction with the job. A sample item is: “I enjoy being at my job”. Cronbach’s alpha reliability as reported by Hellgren *et al.* (1997) is high (0.88).

Career satisfaction: Four items of the scale developed by Greenhaus *et al.* (1990) are used to measure career satisfaction. The responses are measured on a five-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A sample item is: “In general, I like my career”. Cronbach’s alpha reliability for this scale as reported by Greenhaus *et al.* (1990) is 0.88.

Life satisfaction: Only four items of the five-item scale from the Satisfaction With Life Scale (SWLS, Diener *et al.*, 1985) are used to measure life satisfaction (four items, e.g. “So far I have gotten the important things I want in life.”; “In most ways my life is close to my ideal”). Items are rated on a seven-point scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Diener *et al.* (1985) found the scale to be reliable and valid with an alpha coefficient of 0.87 and test-retest reliability of 0.82.

Family satisfaction: A four-item scale developed by Greenhaus *et al.* (1990) is used to measure family satisfaction. The responses are measured on a five-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A sample item is: “In general, I like my family life”. Cronbach’s alpha reliability for this scale as reported in a study by Dyson-Washington (2006) is high: 0.92.

1.3.1.2.13 Statistical analysis

The SPSS programme (IBM SPSS Statistics 20, 2013) and Amos programmes (Arbuckle, 2011) are used to carry out the statistical analysis. The construct validity of these measuring instruments is tested using structural equation modelling (SEM). The χ^2 and several other goodness-of-fit indices are used to summarise the degree of correspondence between the implied and observed covariance matrices. The following goodness-of-fit indices are used as adjuncts to the likelihood-ratio chi square (χ^2) statistics: 1) the root square of approximation (RMSEA); 2) The Comparative Fit Index (CFI); 3) Tucker-Lewis Index (TLI) and 4) the Incremental Fit Index (IFI). The CFI, TLI and IFI are used since the likelihood ratio chi square (χ^2) is sensitive to sample size – i.e. the probability of rejecting a hypothesised model increases with sample size (Bentler, 1990). Acceptable fit of the model is indicated by non-significant χ^2 values, values smaller than or equal to 0.90 for CFI, TLI and IFI, also RMSEA values smaller than or equal to 0.08 (Browne & Cudeck, 1993).

Cronbach's alpha coefficients are used to determine the reliability. To analyse the data further, descriptive statistics is used (e.g. means and standard deviations). Furthermore, product-moment correlation coefficients are used to specify the relationship between the variables. In terms of statistical significance it is decided to set the value at a 95% confidence interval level ($p < 0.05$). Because statistical significance may show results that are practically of little relevance, effect sizes typically are used to determine the practical significance of the relationship (Cohen, 1988; Steyn, 2002). The cut-off point for practical significance of the correlation coefficients are set at 0.30 (medium effect) and 0.50 (large effect) (Cohen, 1988). Multiple regression analyses are carried out to determine the percentage variance explained in the dependent variable (e.g. work vigour, work dedication, job satisfaction, career satisfaction, family vigour, family dedication, family absorption, life satisfaction and family satisfaction) that is predicted by the independent variables (e.g. work resources, home resources, work-to-family enrichment dimensions and family-to-work enrichment dimensions).

1.4 Ethical considerations

During the entire research project ethical considerations are taken into account, throughout the preparation and completion of the empirical studies. Ethical considerations are strictly adhered to in all three empirical studies, although these procedures are not discussed in detail in each article. The following sub-sections focus on important ethical aspects:

1.4.1 Potential benefits and hazards

Participants are not exposed to any potential threats (physical, psychological or disclosure). Prior to the study, permission is obtained from the participants. Participants are requested only to participate in a survey that included questions about their work-family enrichment, work resources, home resources, satisfaction and engagement. All other personal information gained from participants is kept confidential and private. The questionnaire booklets are completed anonymously. The participants are ensured that their responses would be used anonymously for research purposes only.

1.4.2 Recruitment, sampling procedures and informed consent

The survey booklet included a section explaining the research purpose and the process it would follow. Fieldworkers also communicated a standard introduction and orientation on the rationale of the research study to the participants. The participants are informed that their participation in the research project would be voluntary. They are also assured that if they participated in the research and completed a questionnaire they gave the researcher their consent to use the data for research purposes only.

1.4.3 Data protection

Only the researchers involved in the study are allowed to analyse or capture the data. All data collected is kept confidential. The completed questionnaire booklets are protected at all times and kept in a safe secure location, even after capturing and analyses of the data. Booklets are

completely anonymous and only include numbers for record keeping. Furthermore, no personal information is available that could lead to the identification of participants.

1.5 Overview of chapters

In **chapter 2**, a literature review is done on the positive side of the work/family interface. More specifically, an overview is given on the concepts such as work-family enhancement, work-family facilitation, work-family positive spillover and work-family enrichment. A theoretical framework is proposed and an overview provided of the measurements of the positive side of the work/family interface.

Chapter 3 focused on the development of a new instrument, measuring the positive side of the work/family interface – i.e. work-family enrichment.

In **chapter 4** the focus is on the psychometric properties of the newly developed MACE Work-Family Enrichment Instrument, including internal and external validity.

Chapter 5 dealt with assessing work and home resources, work-family enrichment, engagement and satisfaction.

In **Chapter 6** a discussion followed consisting of conclusions, an outline of the limitations of this study as well as recommendations for organisations and future research.

1.6 Chapter summary

This chapter discussed the problem statement, the contribution and value-add of this research and research objectives. The research design used in the empirical studies was explained, followed by a brief overview of the chapters to follow.

References

- Allen, T. D. (2001). Family-supportive work environments: The role of organizational perceptions. *Journal of Vocational Behavior, 58*, 414-435.
- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modelling in practice: A review and recommended two-step approach. *Psychological Bulletin, 3*, 411-423.
- Andrich, D., & Sheridan, B. (2009). *Interpreting RUMM2030 (Part I)*. Perth, Australia: RUMM Laboratory.
- Arbuckle, J. L. (2011). *Amos Development Company. Amos 20.0* Copyright 1983-2008. NET Framework Version 1.1
- Bakker, A. B., Demerouti, E., & Euwema, M. C. (2005). Job resources buffer the impact of job-demands on burnout. *Journal of Occupational Health Psychology, 10*(2), 170-180.
- Bakker, A. B., Demerouti, E., & Verbeke, W. (2004). Using the job demands-resources model to predict burnout and performance. *Human Resource Management, 43*, 83-104.
- Baltes, P. B., Reese, H. W., & Nesselroade, J. R. (1988). *Introduction to research methods: Life-span developmental psychology*. Hillsdale, NJ: Lawrence Erlbaum.
- Barnett, R. C. (1998). Toward a review and reconceptualization of the work/family literature. *Genetic, Social and General Psychology Monographs, 124*, 125-182.
- Bentler, P., & Bonett, D. (1980). Significance tests and goodnesses of fit in the analysis of covariance structures. *Psychological Bulletin, 88*, 588-606.
- Bentler, P. M. (1990). Comparative fit indexes in structural equation models. *Psychological Bulletin, 107*, 238-246.
- Bhargava, S., & Baral, R. (2009). Antecedents and consequences of work-family enrichment among Indian managers. *Psychological Studies, 54*, 213-225.
- Blaikie, N. W. H. (2003). *Analyzing quantitative data: From description to explanation*. Thousand Oaks, CA: Sage.
- Brockwood, K. J., Hammer, L. B., & Neal, M. B. (2003, April 11-13). *An examination of positive work-family facilitation among dual-earner couples in the sandwiched generation*. Paper presented at the 18th annual conferences of the Society for Industrial and Organizational Psychology, Orlando, FL.

- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen, & J. S. Long (Eds.), *Testing structural equation models* (pp. 136-162). Newbury Park, CA: Sage.
- Burke, R. J. (2004). Work and family integration. *Equal Opportunities International*, 23(1), 1-5.
- Carlson, D. S., Ferguson, M., Kacmar, K. M., Grzywacz, J. G., & Whitten, D. (2011). Pay it forward: The positive crossover effects of supervisor work-family enrichment. *Journal of Management*, 37, 770-789.
- Carlson, D. S., Grzywacz, J. G., & Kacmar, K. M. (2010). The relationship of schedule flexibility and outcomes via the work/family interface. *Journal of Managerial Psychology*, 25, 330-355.
- Carlson, D. S., Kacmar, K. M., Wayne, J. H., & Grzywacz, J. G. (2006). Measuring the positive side of the work/family interface: Development and validation of a work-family enrichment scale. *Journal of Vocational Behavior*, 68, 131-164.
- Carlson, D. S., Kacmar, M. K., & Williams, L. J. (2000). Construction and validation of a multidimensional measure of work-family conflict. *Journal of Vocational Behavior*, 56, 249-276.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Orlando, CA: Academic Press.
- Crouter, A. C. (1984). Spillover from family to work: The neglected side of the work/family interface. *Human Relations*, 37, 425-442.
- De Klerk, M., Nel, J. A., Hill, C., & Koekemoer, E. (2013). The development of the MACE work-family enrichment instrument. *South African Journal of Industrial Psychology*, 39(2), 1-16.
- Demerouti, E., Bakker, A. B., & Voydanoff, P. (2009). Does home life interfere with or facilitate job performance? *European Journal of Work and Organisational Psychology*, 19(2), 128-149.
- DeVellis, R. F. (1991). *Scale development: Theory and applications*. Newbury Park, CA: Sage.
- Diener, E. D., Emmons, R. A., Larson, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, 49, 71-75.
- Du Plooy, G. M. (2002). *Communication research: Techniques, methods and applications*. (2nd ed). Cape Town, South Africa: Juta.

- Du Toit, A. (2000). Critic and citizen: The intellectual transformation and academic freedom. *Pretexts: Literary and Cultural Studies*, 9(1), 91-104.
- Dyson-Washington, F. (2006). *The relationship between optimism and work-family enrichment and their influence on psychological well-being* (Unpublished doctoral thesis). Drexel University, Philadelphia, PA.
- Eby, L. T., Casper, W. J., Lockwood, A., Bordeaux, C., & Brinley, A. (2005). Work and family research in IO/OB: Content analysis and review of the literature (1980-2002). *Journal of Vocational Behavior*, 66, 124-197.
- Edwards, J. R., & Rothbard, N. P. (2000). Mechanisms linking work and family: Clarifying the relationship between work and family constructs. *Academy of Management Review*, 25, 178-199.
- Fisher, G. G., Bulger, C. A., & Smith, C. S. (2009). Beyond work and family: A measure of work/nonwork interference and enhancement. *Journal of Occupational Health Psychology*, 14(4), 441-456.
- Foxcroft, C., & Roodt, G. (2013). *An introduction to psychological assessment in the South African context*. Cape Town, South Africa: Oxford University Press.
- Frone, M. R. (2003). Work-family balance. In J. C. Quick, & L. E. Tetrick (Eds.), *Handbook of occupational health psychology* (pp. 143-162). Washington, DC: American Psychological Association.
- Frone, M. R., & Rice, R. W. (1987). Work-family conflict: The effect of job and family involvement. *Journal of Occupational Behavior*, 11, 79-96.
- Frone, M. R., Russell, M., & Cooper, M. L. (1992). Antecedents and outcomes of work-family conflict: Testing a model of the work-family interface. *Journal of Applied Psychology*, 77, 65-78.
- Geurts, S. A. E., & Demerouti, E. (2003) Work/non-work interface: A review of theories and findings. In M. J. Schabracq, J. A. M. Winnubst, & C. L. Cooper (Eds.), *Handbook of work and health psychology* (pp. 279-312). Chichester, UK: John Wiley.
- Geurts, S. A. E., Taris, T. W., Kompier, M. A. J., Dijkers, J. S. E., Van Hooff, M. L. M., & Kinnunen, U. M. (2005). Work-home interaction from a work psychological perspective: Development and validation of a new questionnaire, the SWING. *Work & Stress*, 19(4), 319-339.

- Geurts, S., Rutte, C., & Peeters, M. (1999). Antecedents and consequences of work-home interference among medical residents. *Social Science & Medicine*, 48, 1 135-1 148.
- Gillespie, N. A., Walsh, M., Winefield, A. H., Dua, J., & Stough, C. (2001). Occupational stress in universities: Staff perceptions of the causes, consequences and moderators of stress. *Work & Stress*, 15, 53-72.
- Greenhaus, J. H., & Parasuraman, S. (1994). Work-family conflict, social support and wellbeing. In M. J. Davidson, & R. J. Burke (Eds.), *Women in management: Current research issues* (pp. 213-229). London, UK: Chapman.
- Greenhaus, J. H., Parasuraman, S., & Wormley, W. M. (1990). Effects of race on organizational experiences, job performance evaluations, and career outcomes. *Academy of Management Journal*, 33, 64-86.
- Greenhaus, J. H., & Powell, G. N. (2006). When work and family are allies: A theory of work-family enrichment. *Academy of Management Review*, 31(1), 72 -92.
- Grzywacz, J. G. (2000). Work-family spillover and health during midlife: Is managing conflict everything? *American Journal of Health Promotion*, 14(4), 236-243.
- Grzywacz, J. G., & Marks, N. F. (2000). Re-conceptualizing the work/family interface: An ecological perspective on the correlates of positive and negative spillover between work and family. *Journal of Occupational Health Psychology*, 5, 111-126.
- Hanson, G. C., Hammer, L. B., & Colton, C. L. (2006). Development and validation of a multidimensional scale of perceived work-family positive spillover. *Journal of Occupational Health Psychology*, 11(3), 249-265.
- Hellgren, J., Sjöberg, A., & Sverke, M. (1997). Intention to quit: Effects of job satisfaction and job perceptions. In F. Avallone, J. Arnold, & K. de Witte (Eds.), *Feelings work in Europe* (pp. 415-423). Milano, Italy: Guerini.
- Hill, E. J. (2005). Work-family facilitation and conflict, working fathers and mothers, work-family stressors and support. *Journal of Family Issues*, 26(6), 793-819.
- Holbrook, S. K. (2005). *Development and initial validation of the work-family facilitation scale* (Unpublished doctoral thesis). University of South Florida, FL.
- Jaga, A., & Bagraim, J. (2011). The relationship between work-family enrichment and work-family satisfaction outcomes. *South African Journal of Psychology*, 41(1), 52-62.

- Jaga, A., Bagraim, J., & Williams, Z. (2013). Work-family enrichment and psychological health. *SA Journal of Industrial Psychology, 39*(2), 1-10.
- Keppel, G., Saufley, W. H., & Tokunaga, H. (1992). *Introduction to design and analysis: A student's handbook*. (2nd ed.). New York, NY: W. H. Freeman.
- Kirchmeyer, C. (1992a). Nonwork participation and work attitudes: A test of scarcity vs. expansion models of personal resources. *Human Relations, 45*, 775-795.
- Kirchmeyer, C. (1992b). Perceptions of nonwork-to-work spillover: Challenging the common view of conflict-ridden domain relationships. *Basic and Applied Social Psychology, 13*, 231-249.
- Koekemoer, F. E., & Mostert, K. (2006). Job characteristics, burnout and negative work-home interference. *South African Journal of Industrial Psychology, 32*(3), 87-97.
- Koekemoer, E., & Mostert, K. (2010). Work-nonwork interference: Preliminary results on the psychometric properties of a new instrument. *South African Journal of Industrial Psychology, 36*(1), 1-13.
- Lewis, S. (1997). An international perspective on work-family issues. In S. Parasuraman, & J.H. Greenhaus (Eds.), *Integrating work and family: Challenges and choices for a changing world* (pp. 91-103). Westport, CT: Quorum.
- Lewis, S., & Cooper, C. (2005). *Work-Life Integration: Case studies of organisational change*. Chichester, UK: John Wiley.
- Masuda, A. D., McNall, L. A., Allen, T. D., & Nicklin, J. M. (2012). Examining the constructs of work-to-family enrichment and positive spillover. *Journal of Vocational Behavior, 80*, 197-210.
- Mostert, K. (2006, April). Work-home interaction research in South Africa: Measurement, prevalence and the relationship with wellbeing. In A. B. Bakker (Chair), *Work-Home Interaction and the Impact on Work and Non-Work*. Symposium conducted at the South African Positive Psychology Conference, Potchefstroom.
- Mostert, K., Cronjé, S., & Pienaar, J. (2006). Job resources, work engagement and the mediating role of positive work-home interaction of police officers in the North West province. *Acta Criminologica, 19*, 64-87.
- Mostert, K., & Oldfield, G. (2009). Work-home interaction of employees in the mining environment. *South African Journal of Economic and Management Sciences, 12*(1) 81-99.

- Mostert, K., & Oosthuizen, B. (2006). Job characteristics and coping strategies associated with negative and positive work-home interference in a nursing environment. *South African Journal of Economic and Management Sciences*, 9(4), 429-443.
- Mouton, J. (2001). *How to succeed in your master's and doctoral studies: A South African guide and resource book*. Pretoria, South Africa: Van Schaik.
- Netemeyer, R. G., Boles, J. S., & McMurrian, R. (1996). Development and validation of work-family conflict and family-work conflict scales. *Journal of Applied Psychology*, 81, 400-410.
- O'Driscoll, M. P., Brough, P., & Kalliath, T. J. (2004). Work/family conflict, psychological well-being, satisfaction and social support: A longitudinal study in New Zealand. *Equal Opportunities International*, 23(1/2), 1-5.
- Paoli, P. (1997). *Second European survey on working conditions 1997. European Foundation for the Improvement of Living and Working Conditions*. Dublin, Ireland: Loughlingston House.
- Parasuraman, S., Purohit, Y. S., Godshalk, V. M., & Beutell, N. J. (1996). Work and family variables, entrepreneurial career success, and psychological well-being. *Journal of Vocational Behavior*, 48, 275-300.
- Perry-Jenkins, M., Repetti, R. L., & Crouter, A. C. (2000). Work and family in the 1990s. *Journal of Marriage and Family*, 62, 981-998.
- Pieterse, M., & Mostert, K. (2005). Measuring the work-home interface: Validation of the Survey Work-Home Interaction-Nijmegen (SWING) Instrument. *Management Dynamics*, 14(2), 2-15.
- Poelmans, S. (2001). *Individual and organizational issues in work-family conflict*. Research Paper No. 444, IESE, Barcelona. Retrieved February 8, 2007, from the World Wide Web: <http://www.iese.edu/research/pdfs/DI-0444-E.pdf>
- Polach, J. (2003). HRD's role in work-life integration issues: Moving the workforce to a change in mindset. *Human Resource Development International*, 6(1), 57-68.
- Rost, I., & Mostert, K. (2007). The interaction between work and home of employees in the earthmoving industry: Measurement and prevalence. *South African Journal of Industrial Psychology*, 33(2), 54-61.
- Schaufeli, W. B., Salanova, M., Gonzalez-Roma, V. & Bakker, A. B. (2002). The measurement of engagement and burnout: A confirmative analytic approach. *Journal of Happiness Studies*, 3, 71-92.

- Schreuder, A. M. G., & Theron, A. L. (2001). *Careers: An organizational perspective*. Cape Town, South Africa: Juta.
- Stephens, M. A., Franks, M. M., & Atienza, A. A. (1997). Where two roles intersect: Spillover between parent care and employment. *Psychology and Aging, 12*, 30-37.
- Stephens, G. K., & Sommer, S. M. (1996). The measurement of work to family conflict. *Educational and Psychological Measurement, 56*, 475-486.
- Stevens, D. P., Minnote, K. L., Mannon, S. E., & Kiger, G. (2007). Examining the neglected side of the work/family interface. *Journal of Family Issues, 28*(2), 242-262.
- Steyn, H. S. (2002). Practically significant relationships between two variables. *South African Journal of Industrial Psychology, 28*(3), 10-15.
- Storm, K. (2002). *Burnout and work engagement in the South African Police Service* (Unpublished doctoral thesis). Potchefstroom University for CHE, Potchefstroom, South Africa.
- Struwig, F. W., & Stead, G. B. (2001). *Planning, designing and reporting research*. Cape Town, South Africa: Pearson.
- Sumer, H. C., & Knight, P. A. (2001). How do people with different attachment styles balance work and family? A personality perspective on work-family linkage. *Journal of Applied Psychology, 86*, 653-663.
- Van Hooff, M. L. M., Geurts, S. A. E., Taris, T. W., & Kompier, M. A. J. (2005). Disentangling the casual relationships between work-home interference and employee health. *Scandinavian Journal of Work and Environmental Health, 31*(1), 15-29.
- Voydanoff, P. (2004). The effects of work demands and resources on work-to-family conflict and facilitation. *Journal of Marriage and Family, 66*, 398-412.
- Voyandoff, P. (2005). The effects of community demands, resources, and strategies on the nature and consequences of the work/family interface: An agenda for future research. *Family Relations, 54*, 583-595.
- Wayne, J. H., Musisca, N., & Fleeson, W. (2004). Considering the role of personality in the work-family experience: Relationships of the big five to work-family conflict and facilitation. *Journal of Vocational Behavior, 64*, 108-130.

Wayne, J. H., Randel, A. E., & Stevens, J., (2003, April 11-13). *Individual, work, and family correlates of work-family facilitation*. Paper presented at the 18th annual conferences of the Society for Industrial and Organizational Psychology, Orlando, FL.

Wixom, B. H., & Todd, P. A. (2005). A theoretical integration of user satisfaction and technology acceptance. *Information Systems Research*, 16(1), 85-102.

CHAPTER 2

RESEARCH ARTICLE 1

A revised version of this article was submitted and successfully accepted and published in the *Journal of Psychology in Africa* in 2012.

De Klerk, M., Nel, J. A., & Koekemoer, F. E. (2012). Positive side of the work/family interface: A theoretical review. *Journal of Psychology in Africa*, 22(4), 683-694.

POSITIVE SIDE OF THE WORK/FAMILY INTERFACE: A THEORETICAL REVIEW

Abstract

Orientation: A literature review relating to the positive side of the work/family interface were rigourosly explored.

Research purpose: The main purpose of this article was to report on a review of the literature that covered the positive side of the work/family interface; followed by the identification of a theoretical framework for the positive side and to make recommendations for future research.

Motivation for the study: Gaining more insight into the literature by exploring the often neglected positive side of the work/family interface will expand researchers' insight into the topic.

Research approach, design and method: The research method was to approach various databases, in order to examine the positive side of the work/family interface. A range of relevant literature (1960-2012) was reviewed, which provided information about the positive side of the work/family interface.

Main findings: From the literature it was evident that various concepts are used to conceptualise the positive side of the work/family interface (e.g. work-family enhancement, work-family positive spillover, work-family facilitation and work-family enrichment). Most of these concepts are distinct from each other. Furthermore, findings showed that only a few studies on the phenomenon of positive work/family interface have been reported for the South African population, thus there is still a huge gap in the South African literature regarding the positive work/family interface.

Practical/managerial implications: Exploring the often neglected side of the work/family interface, will help researchers gain more knowledge about this concept and it will assist men and women in their quest for greater satisfaction in life; it will also help employers understand how to cultivate greater work satisfaction among their employees and improve individual and organisational performance.

Contribution/value-add: South African is a multicultural society and individuals may experience the positive side of the work/family interface differently. Therefore more exploration on the positive side of this interface is needed in the South African context.

Key words: work-family enhancement, work-family positive spillover, work-family facilitation, work-family enrichment, work-family enrichment model, measurement.

Introduction

In the past 25 years, a large number of studies have been conducted by behavioural scientists and business/management researchers producing a substantial amount of literature on the intersection of work and family lives. Such studies have increased the body of knowledge of the work/family interface considerably (Barling & Sorensen, 1997; Fisher, Bulger, & Smith, 2009; Greenhaus & Parasuraman, 1999; Greenhaus & Powell, 2006). During this period, changes have occurred in both work and family life such as an increased number of women, dual-earner couples and single-parents partaking in the workforce. This state of affairs have made balancing work and family roles more stressful for many individuals, leading them to face challenges to juggle both work and family responsibilities (Bond, Thompson, Galinsky, & Prottas, 2002; Karatepe & Bekteshi, 2008; Stevens, Minnote, Monnon, & Kiger, 2007). Ultimately this condition results in employees experiencing work-family conflict.

Work-family conflict (also referred to as negative work-family spillover, inter-role conflict and work-family interference) asserts that experiences in the one role lead to stress, time constraints and/or dysfunctional behaviour in the other role (Frone, 2003; Greenhaus & Beutell, 1985), thereby impeding an individual's quality of life (Allen, Herst, Bruck, & Sutton, 2000; Frone, 2003). However, several researchers have promoted a more balanced approach to the work/family interface by also focusing on the positive side of the work/family interface (Frone 2003; Parasuraman & Greenhaus 2002). Focusing on the positive side of the work/family interface may help individuals understand the benefits of experiences and resources gained in the individuals' work and family roles. Such an understanding will enable people to become aware of resources that are gained and help them applying those resources within the work and family domains. Consequently, researchers have explored the positive side of the work/family interface

under a variety of different concepts (Greenhaus & Powell 2006; Grzywacz & Butler 2005). These concepts include work-family enhancement, work-family positive spillover, work-family facilitation, or work-family enrichment) (Frone, 2003; Grzywacz & Marks, 2000; Kirchmeyer, 1992a, 1992b).

The aforementioned constructs refer to the positive interaction between two domains (i.e. work and family), which leads to improved quality of life in both domains (i.e. work and family) (Frone, 2003; Greenhaus & Powell, 2006). For example, fulfilling multiple roles in both work and family domains may produce resources (e.g. skills and perspectives, flexibility, psychological and physical, social-capital, and material means) that could promote growth and a better functioning in other domains of life (Carlson, Kacmar, Wayne, & Grzwacz, 2006; Grzywacz & Marks, 2000). Therefore, when the resources (e.g. skills) employees have acquired in one role are useful in the other, it enriches them, enhancing their quality of life (Frone, 2003; Greenhaus & Powell, 2006). Organisations should devote particular attention to the relationships between the work and family domains and the manner in which these two domains impact on other elements, such as quality of life or job satisfaction (Rashid, Nordin, Omar, & Ismail, 2011). Organisations continually seek competent employees who are thorough in their work. Therefore it is in the best interest of organisations to follow practices that allow their employees to perform at work, but also function meaningfully in their home environment (Rashid *et al.*, 2011a). With this in mind, it seems imperative to shift the focus from the work-family conflict interface to the positive side of the work/family interface.

As mentioned above there are several different concepts (i.e. work-family enhancement, work-family positive spillover, work-family facilitation and work-family enrichment) in the literature proposed to measure the positive work/family interface. The diverse concepts lead to a lack of consistency, which can result in a conceptual and measurement miscellany (Carlson *et al.*, 2006). Furthermore, existing measures were developed without rigorous scale development and validation procedures (Brockwood, Hammer, & Neal, 2003; Carlson *et al.*, 2006; Voydanoff, 2004). Consequently, such measures suffer from poor reliability and validity and may not measure the construct of interest adequately. According to the Employment Equity Act (1998, p.8), “Psychological testing and other similar assessments of an employee are prohibited unless

the test or assessment being used –has been scientifically shown to be valid and reliable; can be applied fairly to all employees; and is not biased against any employee or group”. Eckstein (1998) points out that the Employment Equity Act highlights the importance of the validation of any instruments to be used for assessment purposes. Furthermore, Kriek (1998) and Roodt (1998), also state that this legislation can only help to improve current assessment practices in South Africa and will thus ensure that psychometric tests are used in an unbiased manner, resulting in fairness.

Another problem associated with the conceptual and definitional inconsistency and lack of rigor in measurement is that different scales are used to measure the positive work/family interface across studies (Carlson *et al.*, 2006). For example, several studies have examined the family roles in which an individual participates, such as parent, spouse or caretaker (Hammer & Neal, 2003; Kirchmeyer, 1992a, 1992b, 1993; Stephens & Franks, 1995; Stephens, Franks, & Atienza., 1997). This makes it difficult to aggregate and make comparisons between the findings of studies. Furthermore, mainly all the existing measures of the positive work/family interface are uni-dimensional, except for work-family enrichment, which is multi-dimensional (Carlson *et al.*, 2006).

From the above it is evident that if progress is to be made in the examination of the positive work/family interface, there is a profound need for additional theoretical and empirical development around the positive work/family interface concepts and for improved measurements of these concepts (Grzywacz & Butler, 2005). Masuda, McNall, Allen and Nicklin (2012) also state: “to advance research and theory with regard to the positive side of the work/family interface, it is important to establish widely accepted definitions and validated measures of relevant constructs” (p. 197). Therefore, the same degree of research interest and empirical research as devoted to work-family conflict is imperative for the positive side of the work/family interface (Frone, 2003; Greenhaus & Powell, 2006).

Contribution to the field

It is evident from the discussion above that the potential benefits of participation in the family domain and the work domain need to be examined and understood more thoroughly. Understanding the potential benefits of participation in the work and family domain will assist employees in their strive for deeper satisfaction in life. It will also help employers understand how to cultivate greater work satisfaction among their employees and improve individual and organisational performance in the work place.

What will follow?

In this article, a study is presented that seeks to explore the positive side of the work/family interface. Next, a discussion will be presented of the various approaches for both the negative and positive work/family interface. The concepts of the positive work/family interface will be discussed and the theoretical framework compiled on which this study will be based. A discussion of the identified theoretical framework will be presented, followed by the various measuring instruments used for the positive side of the work/family interface. Finally, conclusions and recommendations will be presented.

Literature review

In any work-family literature, two important themes should be included in the research; 1) presenting a theoretical/conceptual framework to guide the research within which some conceptual issues can be explored, and 2) exploring the measurement of and the empirical issues of the concepts. Based on the first theme, as mentioned above, it is important to present theoretical/conceptual frameworks that guide the research in the work/family interface. It is evident from the literature that the work-family research has been dominated by the negative work/family interface, also known as work-family conflict (Greenhaus & Parasuraman, 1999; Haas, 1999). However, this research study focusses on the positive side of the work/family interface and thus positions itself within the framework of positive psychology developed by Seligman and Csikszentmihalyi (2000). Positive psychology may be defined as “the scientific

study of optimal human functioning aims to discover and promote factors that allow individuals, communities, and societies to thrive and flourish” (Compton, 2005, p. 4). Seligman and Csikszentmihalyi (2000) focused more on the positive aspects which each individual possesses, and how enhancing these positive aspects could create a contented and fulfilled individual. Such a positive understanding of the need to focus on and cultivate the positive attributes of individuals is especially relevant for the work/family interface within the South African context.

Various approaches for the positive work/family interface: Role accumulation/role expansion

The role- accumulation approach of Sieber (1974), and the role-expansion approach of Marks (1977), also referred to as the role-enhancement approach. Sieber (1974) argued that employees involved in multiple roles could gain rewards derived from role accumulation. He classifies these rewards into four types, namely 1) role privileges, 2) overall status security, 3) resources for status enhancement and role performance, as well as 4) enrichment of the personality and ego gratification. Furthermore, Sieber (1974) suggests that involvement in multiple roles outweighs the potential for stress. This condition results in positive outcomes, leading to net gratification and enhanced functioning in other roles (Barnett & Baruch, 1985). Similarly, Marks (1977) proposed the role-expansion approach, also called the role enhancement approach. In Marks’ (1977) approach, he suggested that human energy is a supply-demand phenomenon; the body creates energy to perform these roles, which in turn increases resources and creates additional energy leading to well-being. From these approaches of Sieber (1974) and Marks (1977), a number of terms have been derived to describe the positive benefits of participation in the work and family domains. The following sub-section will highlight the terms based on the above-mentioned approaches.

Relevant concepts for the positive side of the work/family interface

Research on the positive side of the work/family interface began nearly two decades ago when Crouter (1984) identified positive spillover between work and family. After the research on the positive side of the work/family interface was critiqued, a lack of attention was paid to it, during

the 1980s and 1990s (Bidyadhar & Sahoo, 1997; Kirchmeyer, 1992a, 1992b; Pittman & Orthner, 1988; Zedeck & Mosier, 1990). However, a clear shift emerged toward the positive work/family interface by focusing attention on both the workplace into family (work-to-family) and the family into the workplace (family-to-work) (Butler, Grzywacz, Bass, & Linney, 2005; Greenhaus & Powell, 2006; Grzywacz & Marks 2000; Hill, 2005; Mellor, Mathieu, Barnes-Farrell, & Rogelberg, 2001; Voydanoff, 2004). Existing literature conceptualises the positive work/family interface by employing four different terms: 1) *work-family enhancement* (Barnett, 1998; Barnett & Hyde, 2001; Greenhaus & Parasuraman, 1999; Ruderman, Ohlott, Panzer, & King, 2002; Sieber, 1974; Tiedje, Wortman, Downey, Emmons, Biernat, & Lang, 1990; Voydanoff, 2002); 2) *work-family positive spillover* (Crouter, 1984; Edwards & Rothbard, 2000; Grzywacz & Marks, 2000; Hanson, Hammer, & Colton, 2006; Kirchmeyer, 1992a, 1992b; Stephens *et al.*, 1997; Sumer & Knight, 2001; Voydanoff, 2001); 3) *work-family facilitation* (Grzywacz, 2000); and 4) *work-family enrichment* (Greenhaus & Powell, 2006; Carlson *et al.*, 2006). Each of these terms will be discussed separately below.

Work-family enhancement

Work-family enhancement is based on the role-accumulation perspective and represents the acquisition of resources and experiences that are beneficial for individuals in facing life challenges (Sieber, 1974). These resources, derived from role accumulation, include 1) role privileges, 2) overall status security, 3) resources for status enhancement and role performance, and 4) enrichment of the personality, as well as ego gratification (Sieber, 1974). Work-family enhancement focuses on how multiple roles enhance various constructs (e.g. self-esteem, confidence), which can influence countless outcomes positively in peoples' work and family lives (Carlson *et al.*, 2006).

Work-family positive spillover

The term work-family positive spillover has been used in the literature since the early 1980s (Crouter, 1984). This concept refers to the transfer of personal gains (e.g. affect, skills, behaviours and values) from the originating domain to the receiving domain, thus having beneficial effects on the receiving domain and causing the two domains to be similar (Carlson *et al.*, 2006; Edwards & Rothbard, 2000; Hanson *et al.*, 2006). Edwards and Rothbard (2000) have

delineated four types of positive spillover, which are *affect*, *values*, *skills* and *behaviours*. Each of these types of spillover is believed to occur from work to family and from family to work. *Affect* may be transferred between roles in one of two ways. In the first case, positive affect (e.g. excitement, enthusiasm, happiness) experienced in one role (the originating role) may increase self-efficacy, motivation, and positive interpersonal interactions in the other role, which may lead to better performance in this other role (the receiving role) (Hanson *et al.*, 2006). *Values*, *skills* and *behaviours* learned in one role can influence more general personal schemas and thereby impact on other roles. Values (e.g. autonomy, curiosity, consideration) learned in one role, for example, may have a socialising influence on an employee's general life values and therefore mediate what is valued in other roles. Skills (e.g. interpersonal communication) and behaviour (e.g. disciplinary style) also may be transferred through this indirect process (Hanson *et al.*, 2006).

Work-family facilitation

Different definitions have been advanced to specify work-family facilitation. Work-family facilitation is conceptualised by Frone (2003) as the extent to which participation at work (or family) is made easier by virtue of the experiences, skills, and opportunities gained or developed in the family (or work) domain. This conceptualisation reflects the synergies between work and family life, and the potential for enhanced performance is implied. Furthermore, work-family facilitation is conceptualised according to Wayne, Grzywacz, Carlson and Kacmar (2007) as the extent to which an individual's engagement in one domain of life (e.g. work or family) yields gains that result in enhanced functioning in another life domain (e.g. family or work). These gains can be captured in four broad categories, namely 1) *developmental gains*, or the acquisition of skills, knowledge, values, or perspectives; 2) *affective gains*, or alteration in moods, attitudes, confidence, or other aspects of emotion; 3) *capital gains*, or the acquisition of economic, social, or health assets; and 4) *efficiency gains*, or the enhanced focus/attention induced by multiple role responsibilities (Wayne *et al.*, 2007). A central element in these definitions is that role functioning is made easier by virtue of participation in another role.

Work-family enrichment

Work-family enrichment is conceptualised as the extent to which experiences in one role improve the quality of life, namely performance or affect, in the other role (Greenhaus & Powell, 2006). Furthermore, work-family enrichment occurs when resources (skills and perspectives, flexibility, psychological and physical, social-capital, and material resources) are gained from one role that improves the other role. This can occur either directly (e.g. instrumental path) by improving performance in the other role or indirectly (e.g. affective path) through influence on positive affect (Carlson *et al.*, 2006; Greenhaus & Powell, 2006). *Skills and perspectives* refer to cognition, interpersonal, and multi-tasking skills, ways of defining problems or situations; *flexibility* refers to discretion in the timing, pace, and location at which role requirements are met; *psychological and physical resources* imply self-esteem, optimism, physical health; *social-capital resources* indicate the influence and information derived from interpersonal relationships in work and family roles; and *material resources* refers to money and gifts gained from the work or family domains (Greenhaus & Powell, 2006). In the light of this conceptualisation, concepts such as work-family positive spillover and work-family facilitation can be generally categorised under the description of work-family enrichment (Hanson *et al.*, 2006). Furthermore, work-family enrichment to date has been the only concept in the positive work/family interface literature that builds on a proper developed conceptualised theoretical model.

A Theoretical framework for the positive side of the work/family interface: Work-family enrichment

Greenhaus and Powell's (2006) theoretical model of work-family enrichment focuses on the generation and application of a wide range of resources that are accumulated through participating in one role, which may then be applied to the other role. This may result in improved performance or positive affect in the latter role (Carlson *et al.*, 2006). This assumption is summarised in Figure 1. There are five kinds of resources that promote enrichment, namely 1) skills and perspectives, 2) psychological and physical resources, 3) social-capital resources, 4) flexibility, and 5) material resources. In the following paragraph, these five resource types are defined more concretely.

Firstly, Greenhaus and Powell (2006) define *skills* as “a broad set of task-related cognitive and interpersonal skills, coping skills, multitasking skills, and knowledge and wisdom derived from role experiences” (p.80). *Perspectives* are defined as “ways of perceiving or handling situations” (p. 80). *Psychological and physical resources* are defined as “positive self-evaluations, such as self-efficacy and self-esteem, it also include personal hardiness, positive emotions about the future, such as optimism and hope and physical health” (p. 80). *Social-capital* resources can be defined as “the goodwill that is engendered by the fabric of social relations and that can be mobilized to facilitate action” (Adler & Kwon, 2002, as cited in Greenhaus & Powell, 2006, p. 80). More specifically, Greenhaus and Powell focus on two forms of social-capital resources in their model, namely influence and information. These resources stem from “interpersonal relationships in work and family roles that may assist individuals in achieving their goals” (p. 80). *Flexibility* is defined as “discretion to determine the timing, pace, and location at which role requirements are met” (p. 80). The fifth resource according to Greenhaus and Powell’s (2006) theoretical model is *material resources*, which can be defined as “money and gifts obtained from work and family roles” (p. 80).

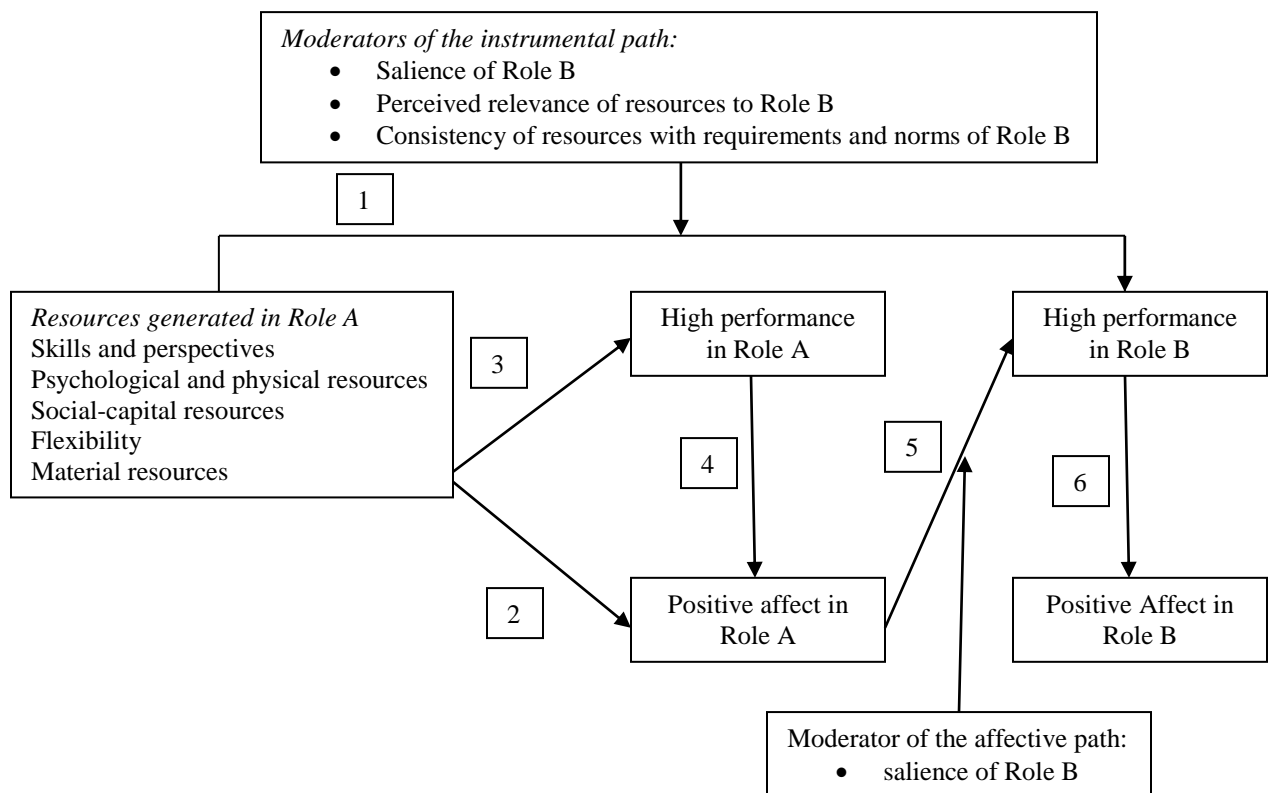


Figure 1: Adapted from Figure 1 in Greenhaus and Powell (2006, p. 79)

Greenhaus and Powell (2006) proposed two paths to enrichment, namely the instrumental path and the affective path. First, a resource may be transferred directly from Role A to Role B, thereby enhancing performance (arrow 1 in Figure 1) and in turn positive affect (arrow 6) in Role B. This process is considered the instrumental path of the model (Hanson *et al.*, 2006), because a resource from one role has a positive instrumental effect on performance in another role. There are numerous empirical findings in the literature that support the existence of the *instrumental path* to enrichment (Friedman & Greenhaus, 2000; Greenhaus & Powell, 2006; Ruderman *et al.*, 2002). For example, Ruderman *et al.* (2002) reported that numerous resources (i.e. interpersonal skills, respect for individual differences, and multitasking abilities) from research participants' personal lives improved their performance as managers. A further study by Friedman and Greenhaus (2000) found that flexibility in one's work role provides opportunity for individuals to engage more fully in family activities and therefore enriches family role performance.

Secondly, "a resource generated in Role A may promote positive affect in Role A in two ways, either directly (arrow 2) or indirectly, through its effect on performance in Role A (arrows 3 and 4); positive affect in Role A in turn may produce high performance (arrow 5) and positive affect (arrow 6) in Role B" (Powell & Greenhaus, 2006, p. 625). This mechanism is considered the *affective path* of the model (Hanson *et al.*, 2006) because of the central role of positive affect in the enrichment process. Greenhaus and Powell (2006) define positive affect as "positive moods and positive emotions derived from role experiences" (p. 82). Studies such as the one by Rothbard (2001) support the existence of the positive affect path to enrichment. Rothbard (2001) suggests that there are three mechanisms through which positive affect in one role can enhance performance in another role. These three explanations are founded on the premise that positive affect increases engagement, which then affects performance. The explanations are: 1) Given that positive affect is related to benevolence and assisting behaviour, a person experiencing positive affect is more likely to be psychologically available to engage in another role; 2) Positive affect is correlated with outward focus of attention, presumed to promote positive interpersonal interaction; 3) Positive affect can increase a person's energy level, implicated in the ability to remain engaged in another domain (Shein & Chen, 2011).

Lastly, Greenhaus and Powell (2006) identified potential moderators that specify the conditions in which resources from one role are likely to result in high performance or positive affect in another role. These moderators include the *instrumental* path and the *affective* path. The *instrumental* path are the salience of the role in the receiving domain (i.e. Role B in *figure 1*); the perceived relevance of the resource to the role in the receiving domain; and the consistency of the resource with requirements and norms of the role in the receiving domain. The moderator of the *affective* path is the salience of the role in the receiving domain (i.e. Role B in *Figure 1 above*). Referring once again to Rothbard's (2001) conceptualisation of how positive affect impacts role engagement, Greenhaus and Powell (2006) note that "although positive affect derived from one's family role may expand the tendencies to be helpful, available, and energized, these tendencies may not be applied to a work domain and vice versa, that is minor rather than central to one's self-concept" (p. 86).

From the literature examined above, it is clear that the positive work/family interface has long been neglected and that there is a lack of understanding within the South African context of how work positively affects family life and vice versa. Furthermore, it is important to consider the conceptual distinctions among the various concepts (e.g. work-family enhancement, work-family positive spillover, work-family facilitation and work-family enrichment) of the positive work/family interface. Such an understanding will guide researchers to explore the concepts further by developing instruments which can measure the positive side of the work/family interface. Work-family enrichment is the only one of the above concepts of the positive work/family interface that is based on a published, peer-reviewed theoretical model (Greenhaus & Powell, 2006). Therefore the concept work-family enrichment is seen as the theoretical framework for this study.

As mentioned previously, the second important theme to consider in the literature on the work-family interface is the measurement of concepts. In the following section illustrative examples are given about the measurement of the work/family interface.

Measurement of the work/family interface: Illustrative examples

Work-family conflict has dominated most of the work-family literature as mentioned above. Therefore most of the measures developed and tested were that of work-family conflict, leaving the positive work/family interface with little attention. A wide variety of instruments measuring work-family conflict are found across international studies (for summaries of work-family conflict studies, see Allen *et al.*, 2000; Mesmer-Magnus, & Viswesvaran, 2005). However, several theoretical and measurement limitations for this work/family interaction exist in the literature. These limitations include instruments measuring the different directions of interference, the conceptualisation and terminology used to describe the interaction, and the development and use of items. Furthermore, other important limitations are the use of instruments where the psychometric properties of the instruments are unknown or inadequate, and the lack of thorough reporting on these properties (Parasuraman, & Greenhaus, 2002; Robinson, Shaver, & Wrightsman, 1991; Schultheiss, 2006; Voydanoff, 2007). It appears that some researchers report only certain measures of validity (Curbow, McDonell, Spratt, Griffen, & Agnew, 2003; Stephens, & Sommer, 1996), while other researchers fail to report *any* of these measures (Kirchmeyer, 1992a, 1992b; Premeaux, Adkins, & Mossholder, 2007). It is crucial to use instruments that are psychometrically sound, since these instruments hold various implications for relationships with other variables and its validity (DeVellis, 1991; Robinson *et al.*, 1991).

During the last twenty years, the topic of the positive work/family interface has become more prevalent. As is the case with research on work-family conflict, different researchers developed and applied various instruments to measure the positive side of the work/family interface. One such measuring instrument is that of Kirchmeyer (1992a, 1992b, 1993), who developed a fifteen-item scale. This instrument was based on Sieber's (1974) four types of benefits of the role accumulation approach, namely 1) gaining role privileges, referring to the greater number of roles accumulated, the greater the number of privileges that can be enjoyed (three items, e.g. "Earns me certain rights and privileges that otherwise I could not enjoy"); 2) overall status security, referring to the buffering of a role's strain by participation in other roles (four items, e.g. "Gives me support so I can face the difficulties of work"); 3) resources for status

enhancement and role performance, referring to the by-products of one role (e.g. personal contacts) that are invested in other roles (four items, e.g. “Gives me access to certain facts and information which can be used at work”); as well as 4) enrichment of the personality and ego gratification. This implies the tolerance gained through the recognition of discrepant viewpoints and the flexibility required in adjusting to the demands (four items, e.g. “Develops skills in me that are useful at work”) (Kirchmeyer, 1992a, 1992b). A few limitations of this scale do exist. Kirchmeyer’s (1992a, 1992b) measuring instrument only focused on one direction of the interface, the nonwork (roles such as parenting, community and recreation) to work spillover, but not from work to nonwork spillover. Furthermore, Kirchmeyer’s (1992a, 1992b) scale was developed to assess the above-mentioned four types of benefits; however, the dimensionality and reliabilities of the scale were not tested.

National Survey of Midlife Development in the United States (MIDUS): This instrument was revised in the 1990s. The MIDUS scale has been used in a number of positive work-family studies (e.g. Grzywacz, 2000; Grzywacz, Almeida, & McDonald, 2002; Grzywacz & Butler, 2005; Grzywacz & Marks, 2000, Wayne *et al.*, 2007). This scale consists of two dimensions, work-to-family positive spillover (e.g. “The skills you use on your job are useful for things you have to do at home”) and family-to-work positive spillover (e.g. “Providing for what is needed at home makes you work harder at your job”), each composed of four items. Although this scale has been shown to have adequate reliability (i.e. positive work to family spillover = 0.74 and positive family to work spillover = 0.73), it is not without its shortcomings.

A major shortcoming of the MIDUS scale is that the measure is not based on a solid theoretical foundation. Parts of the items are also connected closely to hypothesised outcomes (e.g. fatigue) or antecedents (e.g. spouse support) of the work/family interface. Therefore these items and may produce high correlations with those variables that are conceptualised either by outcomes or antecedents of the work/family interface (Voydanoff, 2004). A lack of items that consider positive psychological spillover is also present (Voydanoff, 2004). Furthermore, the dimensionality of the measure has been examined by explorative factor analysis (Grzywacz & Marks, 2000), which is not considered the most adequate way to test the structure of a measure based on dimensionality that is constructed theoretically (Grzywacz & Marks, 2000).

Stephens *et al.* (1997) designed and used the MIDUS instrument to measure spillover between the roles of caregiver to a parent and work. The scale has two dimensions, work to caregiver (alpha = 0.73) and care giver to work (alpha = 0.82) (Hanson *et al.*, 2006). Limitations of this scale are that it only focuses on one family role (caregiver to an elderly parent) and thus only transfers affect from the one domain to the other. This scale was adapted by Hammer, Cullen, Neal, Sinclair and Shafiro (2005) to assess spillover between the general family and work roles. This study involved a longitudinal survey of dual-earner couples, which means that alphas were taken from men and women separately at two time points. For work-to-family positive spillover, alphas ranged from 0.82 to 0.83. For family-to-work positive spillover, alphas ranged from 0.72 to 0.79. A limitation of this study, though, was that Hammer *et al.* (2005) focussed only on the transfer of mood from one domain to the other. Because of these differences of the positive spillover scales, no comparison between studies could have been made. This necessitated the development of a new positive spillover scale by Hanson *et al.* (2006), based on the definition for work-family positive spillover.

The Multi-dimensional Scale of Perceived Work-Family Spillover: This scale was developed by Hanson *et al.* (2006). It provides a multi-dimensional measurement of work-family spillover, which is based on a clear definition of positive spillover that is consistent with past and present conceptualisations (Edwards & Rothbard, 2000; Staines, 1980). It includes the transfer of three different types of positive spillover (affective positive, behaviour-based instrumental positive, and value-based instrumental positive spillover). This spillover was from the originating domain (e.g. work or family) to the receiving domain (e.g. family or work), therefore having beneficial effects on the receiving domain (Hanson *et al.*, 2006). Examples of items for each type of positive spillover in the work to family direction are: 1) affective positive spillover (e.g. four items, “When things are going well at work, my outlook regarding my family life is improved”); 2) behaviour-based instrumental positive spillover (four items, e.g. “Skills developed at work help me in my family life”) and 3) value-based instrumental positive spillover (three items, e.g. “Values developed at work make me a better family member”). Examples of items for each type of positive spillover in the family to work spillover direction are: 1) affective positive spillover (four items, e.g. “When things are going well in my family life, my outlook regarding my job is

improved”); 2) behaviour-based instrumental positive spillover (four items, e.g. “Skills developed in my family life help me in my job”) and 3) value-based instrumental positive spillover (three items, e.g. “Values developed in my family make me a better employee”). A limitation of this scale is that it was developed for studies without rigorous scale development and validation procedures (Carlson *et al.*, 2006).

It can be seen from the discussion above that each measurement that was developed for the positive work/family interface, encounters certain limitations. These limitations may be due to inconsistencies in the conceptualisation and definition of the positive work/family interface (Carlson *et al.*, 2006).

Another problem associated with the conceptual and definitional inconsistency in measurement is that different scales are used to measure the positive work/family interface across studies (Carlson *et al.*, 2006), making it difficult to compare the findings of such studies. Furthermore, nearly all the existing measurements of the positive work/family interface are uni-dimensional (Carlson *et al.*, 2006). For example, Kirchmeyer (1992a) created a measure of resource enrichment to capture the four resource gains (i.e., privileges gained, status security, status enhancement, and personality development) by which multiple role occupancy yields its benefits (Sieber, 1974); however, these four gains were collapsed in the analyses. Likewise, positive spillover is posited to be multi-dimensional (i.e., the transfer of skills, moods, values, and behaviors), but all operationalisations’ of this construct have been uni-dimensional. These limitations or shortcomings of previous measures have been addressed by Carlson *et al.* (2006) by presenting the first empirically valid, self-reported measure of work-family enrichment that was multi-dimensional (Carlson *et al.*, 2006).

The Work-Family Enrichment Scale: This scale was developed by Carlson *et al.* (2006) as a self-report measure of enrichment that captures the extent to which resource gains experienced in one domain are transferred to another in ways that result in improved quality of life in one role for the individual (Carlson *et al.*, 2006). Carlson *et al.* (2006) based their measuring instrument on Greenhaus and Powell’s (2006) conceptualisation of enrichment, but did not limit themselves to only the five categories of resource gains theorised by Greenhaus and Powell (2006) that was

examined above (namely (1) skills and perspectives, (2) psychological and physiological resources, (3) social-capital resources, (4) flexibility, and (5) material resources). Carlson *et al.* (2006) measure work-family enrichment by using an 18-item scale. This scale measures three dimensions from work to family (i.e. development, affect, and capital) and three dimensions from family to work (i.e. development, affect, and efficiency) (Carlson *et al.*, 2006). Examples for the work-to-family enrichment direction are: *work-family development* occurs when involvement in work leads to the acquisition or refinement of skills, knowledge, behaviours, or ways of viewing things that help an individual be a better family member (six items, e.g. “Helps me acquire skills and this helps me be a better family member”); *work-family affect* refers to a positive emotional state or attitude that occurs when involvement in work helps the individual be a better family member (six items, e.g. “Puts me in a good mood and this helps me be a better family member”); and *work-family capital* occurs when involvement in work promotes levels of psycho-social resources such as a sense of security, confidence, accomplishment, or self-fulfilment that helps the individual be a better family member (six items, e.g. “Provides me with a sense of success and this helps me be a better family member”).

Family-work development occurs when involvement in family leads to the acquisition or refinement of skills, knowledge, behaviours or ways of viewing things that help an individual be a better worker (six items, e.g. “Helps me expand my knowledge of new things and this helps me be a better worker”); *family-work affect* occurs when involvement in family results in a positive emotional state or attitude that helps the individual be a better worker (six items, e.g. “Makes me cheerful and this helps me be a better worker”); and *family-work efficiency* occurs when involvement with family provides a sense of focus or urgency that helps the individual be a better worker (six items, e.g. “Helps me concentrate on the important things and this helps me be a better worker”).

The scale developed by Carlson *et al.* (2006) offers several advantages related to existing scales that measure the positive side of the work/family interface. Some of the existing measures of the positive work/family interface only capture one direction (i.e. Kirchmeyer, 1992a, 1992b; Stephens *et al.*, 1997), whereas the work-family enrichment scale captures both directions (i.e. work-to-family and family-to-work). The work-family enrichment scale partially captures the

complexity of the construct of work-family enrichment by including resources gained in one domain, their transfer to another domain, and their successful application within the receiving domain, represented by enhanced functioning. Furthermore, the scale was developed systematically to include multiple dimensions of potential enrichment. Other advantages include the instrument's established methodological procedures, it having been tested across five samples, validated in a many different ways, and assessed in relation to potential antecedents and outcomes as suggested in the existing literature (Carlson *et al.*, 2006). Finally, this scale was based on the theoretical view of Greenhaus and Powell's (2006) conceptualisation of the work-family enrichment concept.

In summary, it is evident from the review above that the development of testable theories on the positive side of the work/family interface has been burdened by a number of limitations. Among these limitations include: the difficulty in conceptualising and defining the various positive work-family concepts (e.g. work-family enhancement, work-family positive spillover, work-family facilitation and work-family enrichment) and the inadequacy of measurements. In order to create a better understanding of the positive work/family interface, these limitations must be resolved. This theoretical model of work-family enrichment is the only one, to date, that attempts to address the lack of meaningful theory in the literature by defining and measuring the concept of *work-family enrichment*. Therefore this model is used as the theoretical framework on which this study is based.

Discussion

The aim of this review was to gain more insight into the often neglected side of the work/family interface. This was done by exploring the relevant literature on how individuals use experiences and resources in one role to improve the quality of life in another role (Carlson *et al.*, 2006; Greenhaus & Powell, 2006). By understanding the benefits of experiences and resources gained in work and family roles, it should help employees (male and female) enjoy greater satisfaction in life. Concurrently, it will also help employers gain an understanding of ways to cultivate greater work satisfaction among their employees and develop specific skills with which to

accomplish this, thereby improving the performance of the employees as well as the organisation.

The literature showed that various concepts are used to conceptualise the positive side of the work/family interface (e.g. work-family enhancement, work-family positive spillover, work-family facilitation and work-family enrichment). Most of these concepts are based on Sieber (1974) and Marks's (1977) approaches of role-accumulation and role-enhancement. However, very few of these concepts are based on a proper theoretical foundation or theoretical model. Without a theoretical foundation, research on the positive side of the work/family interface will proceed in an incoherent manner and lead to continuous limitations and shortcomings. If progress is to be made in the positive work/family interface, existing theories should be refined in order to measure concepts of positive work/family interface more concretely (Grzywacz & Butler, 2005, Wayne, Randel, & Stevens, 2003).

As seen from the review, the construct work-family enrichment is the only concept, to date, that is based on a sound theoretical model. It was conceptualised by Greenhaus and Powell (2006). This conceptual and theoretical model provides a foundation on which future research and theoretical development of this topic can be built. By using this theoretical model, a better understanding of the process of work-family enrichment may help to determine the established antecedents and outcomes of this phenomenon. Therefore the work-family enrichment model of Greenhaus and Powell (2006) is proposed as the theoretical framework for this study. Furthermore the concepts that measure the positive work/family interface (e.g. work-family enhancement, work-family positive spillover, work-family facilitation and work-family enrichment), as mentioned above, are somewhat distinct from each other, which will make linkages of empirical findings more challenging. Thus it is important to take note of these differences when developing instruments to measure the positive side of the work/family interface.

A further challenge that stems from the literature on the positive work-family interface is the issue of measurement. Existing measures differ widely in terms of validity and reliability (Brockwood *et al.*, 2003, Carlson *et al.*, 2006; Voydanoff, 2004). Carlson *et al.* (2006) indeed

developed a measuring instrument for the positive work/family interface, based on the theoretical model of work-family enrichment (Greenhaus & Powell, 2006). However, a distinct disadvantage was that their measuring instrument resulted in only measuring three resources in each direction (work-family and family-work) as described by Greenhaus and Powells' (2006) theoretical model of work-family enrichment. It is therefore imperative to develop measures that are based on a sound theoretical framework (such as that of Greenhaus & Powell, 2006), which includes all the suggested resources. In addition, such an instrument should be demonstrated as valid and reliable.

In sum, it is evident from the review above that the development of testable theories on the positive side of the work/family interface has been burdened by a number of issues, such as the difficulty in conceptualising and defining the various concepts (e.g. work-family enhancement, work-family positive spillover, work-family facilitation and work-family enrichment) and insufficient measuring instruments. In order to create a better understanding of the positive work/family interface, these issues must be resolved first. Therefore it is suggested that the work-family enrichment model of Greenhaus and Powell (2006) should be used as a theoretical framework for this study.

Recommendations

The need to explore the positive side of the work/family interface is relevant and has not yet been explored to such an extent as the negative work/family interface. Within South Africa, only a few studies have been undertaken on the positive side of the work/family interface, thus leaving a gap in the literature (Jaga & Bagraim, 2011; Jaga, Bagraim, & Williams, 2013). South Africa is a multicultural society with different cultural backgrounds, values, norms and ethnicities among various groups (Lewis, 1999). Because of these differences, cultural groups may experience and influence the positive interaction between work and family differently from each other and from other countries. Therefore such a positive interaction should be conceptualised within the South African context. Further research on this topic will not only benefit individuals, but also organisations.

From the literature it appears that there is a lack of efficient instruments measuring the positive side of the work/family interface. Furthermore, very few instruments are based on a theoretical foundation and various concepts exist that conceptualise the positive work/family interface in different ways. This makes it difficult to make comparisons between studies of the positive work/family interface. Therefore, it is recommended, that the work-family enrichment theoretical model (Greenhaus & Powell, 2006) should be tested and applied to the unique South African context, as it is the only sound theoretical framework for the positive side of the work/family interface. This will enable researchers to use the latter framework to begin a thorough and systematic exploration of antecedents, outcomes, as well as the mediating and moderating variables related to the enrichment process. It is furthermore also recommended using the theoretical model of work-family enrichment as a framework in developing new measuring instruments for the positive side of the work/family interface. The work-family enrichment scale of Carlson *et al.*, (2006) is the only measuring instrument to date that is based on a theoretical model (i.e. work-family enrichment model of Greenhaus & Powell, 2006), but it only measures a certain amount of resources as outlined by the theoretical model. Thus it is suggested that a new instrument measuring the various resources of the work-family enrichment model should be developed and validated.

No precise measurement tool for the positive side of the work/family interface has of yet been developed for the South African context. Furthermore, the majority of these instruments measuring the positive side of the work/family interface are developed in other countries, which is based on Western societal and work concepts. It stands to reason that the etiquettes, customs, values of the society, nature and concepts of the family structure and organisations in South Africa are somewhat different from that of the Western and European countries. It becomes practically difficult to apply these measuring instruments directly (Lewis, 1999). It is recommended that a measuring instrument is developed for the positive work/family interface based on a proper theoretical framework, in order to explore how South Africans experience positive interaction across their work/family domains. A further recommendation is that measuring instruments should be validated across numerous occupations and organisations to determine validity generalisation, i.e. to ensure that the relationships reported between the positive work/family interface and the work and family variables are the same across studies and

populations. It is hoped that further validation will help researcher to use the instruments with confidence, and also add to the possible generalisability of positive interactions between the work and family domains.

Developing and validating a new measuring instrument for the positive side of the work/family interface for South African circumstances will not only facilitate researchers' understanding of the integration of the work and family spheres, but will also facilitate their understanding of the benefits that can be derived from it. It seems therefore imperative develop a valid, equivalent, unbiased and reliable measuring instrument that is based on a sound theoretical framework (as a follow-up of the work-family enrichment model of Greenhaus & Powell, 2006). Such an instrument could measure these unique factors of the positive side of the work/family interface within a South African context. Naturally researchers worldwide can also benefit from such a sound theoretically based instrument.

References

- Allen, T. D., Herst, D. E. L., Bruck, C. S., & Sutton, M. (2000). Consequences associated with work-to-family conflict: A review and agenda for future research. *Journal of Occupational Health Psychology, 5*, 278-308.
- Barling, J., & Sorensen, D. (1997). Work and family: In search of a relevant research agenda. In C. L. Cooper, & S. E. Jackson (Eds.), *Creating tomorrow's organizations* (pp. 157-169). New York, NY: Wiley.
- Barnett, R. C. (1998). Toward a review and reconceptualization of the work/family literature. *Genetic, Social and General Psychology Monographs, 124*, 125-182.
- Barnett, R. C., & Baruch, G. K. (1985). Women's involvement in multiple roles and psychological distress. *Journal of Personality and Social Psychology, 49*, 135-145.
- Barnett, R. C., & Hyde, J. S. (2001). Women, men, work, and family. An expansionist theory. *American Psychologist, 56*, 781-796.
- Bernas, K. H., & Major, D. (2000). Contributors to stress resistance: Testing a model of women's work-family conflict. *Psychology of Women Quarterly, 24*(2), 170-178.
- Bidyadhar, S., & Sahoo, F. M. (1997). Psychosocial factors of work-family linkage. *Psychological Studies, 42*(2&3), 49-60.
- Bond, J. T., Thompson, C. A., Galinsky, E., & Prottas, D. (2002). *Highlights of the national study of the changing workforce*. New York, NY: Families and Work Institute.
- Brockwood, K. J., Hammer, L. B., & Neal, M. B. (2003, April). *An examination of positive work-family facilitation among dual-earner couples in the sandwiched generation*. Paper presented at the 18th annual conferences of the Society for Industrial and Organizational Psychology, Orlando, FL.
- Butler, A. B., Grzywacz, J. G., Bass, B. L., & Linney, K. D. (2005). Extending the demands-control model: A daily diary study of job characteristics, work-family conflict and work-family facilitation. *Journal of Occupational and Organizational Psychology, 78*, 155-169.
- Carlson, D. S., Kacmar, K. M., Wayne, J. H., & Grzywacz, J. G. (2006). Measuring the positive side of the work/family interface: Development and validation of a work-family enrichment scale. *Journal of Vocational Behavior, 68*, 131-164.
- Compton, W.C. (2005). *An Introduction to Positive Psychology*. USA: Thomson Wadsworth.

- Crouter, A. C. (1984). Spillover from family to work: The neglected side of the work/family interface. *Human Relations*, 37, 425-442.
- Curbow, B., McDonell, K., Spratt, K., Griffen, J., & Agnew, J. (2003). Development of the work/family interface scale. *Early Childhood Research Quarterly*, 18, 310-330.
- DeVellis, R. F. (1991). *Scale development, theory and application*. Thousand Oaks, CA: Sage.
- Eby, L. T., Casper, W. J., Lockwood, A., Bordeaux, C., & Brinley, A. (2005). Work and family research in IO/OB: Content analysis and review of the literature (1980-2002). *Journal of Vocational Behavior*, 66, 124-197.
- Eckstein, S. (1998). Testing Times. *People Dynamics*, 17(6), 54-55.
- Edwards, J. R., & Rothbard, N. P. (2000). Mechanisms linking work and family: Clarifying the relationship between work and family constructs. *Academy of Management Review*, 25, 178-199.
- Employment Equity Act. (1998). No.55. Republic of South Africa.
- Fisher, G. G., Bulger, C. A., & Smith, C. S. (2009). Beyond work and family: A Measure of work/nonwork interference and enhancement. *Journal of Occupational Health Psychology*, 14(4), 441-456.
- Friedman, S. D., & Greenhaus, J. H. (2000). *Work and family – allies or enemies? What happens when business professionals confront life choices*. New York, NY: Oxford University Press.
- Frone, M. R. (2003). Work-family balance. In J. C. Quick, & L.E. Tetrick (Eds.), *Handbook of occupational health psychology* (pp. 143-162). Washington, DC: American Psychological Association.
- Goode, W. J. (1960). A theory of role strain. *American Sociological Review*, 25, 483-496.
- Greenhaus, J. H., & Beutell, N. J. (1985). Sources of conflict between work and family roles. *Academy of Management Review*, 10, 76-88.
- Greenhaus, J. H., & Parasuraman, S. (1999). Research on work, family, and gender: Current status and future directions. In G. N. Powell (Ed.), *Handbook of gender and work* (pp. 391-412). Newbury Park, CA: Sage.
- Greenhaus, J. H., & Powell, G. N. (2006). When work and families are allies: A theory of work-family enrichment. *Academy of Management Review*, 31(1), 72-92.
- Grzywacz, J. G. (2000). Work-family spillover and health during midlife: Is managing conflict everything? *American Journal of Health Promotion*, 14(4), 236-243.

- Grzywacz, J. G., Almeida, D. M., & McDonald, D. A. (2002). Work-family spillover and daily reports of work and family stress in the adult labor-force. *Family Relations, 51*, 28-36.
- Grzywacz, J. G., & Butler, A. B. (2005). The impact of job characteristics on work-to-family facilitation: Testing a theory and distinguishing a construct. *Journal of Occupational Health Psychology, 10*, 97-109.
- Grzywacz, J. G., & Marks, N. F. (2000). Re-conceptualizing the work/family interface: An ecological perspective on the correlates of positive and negative spillover between work and family. *Journal of Occupational Health Psychology, 5*, 111-126.
- Haas, L. (1999), Families and work. In M. B. Sussman, S. K. Steinmetz, & G. W. Peterson (Eds.), *Handbook of marriage and the family* (pp. 571-612). New York, NY: Plenum.
- Hammer, L. B., Cullen, J. C., Neal, M. B., Sinclair, R. R., & Shafiro, M. V. (2005). The longitudinal effects of work-family conflict and positive spillover on depressed symptoms among dual-earner couples. *Journal of Occupational Health Psychology, 10*(2), 138-154.
- Hammer, L. B., & Neal, M. B. (2003, April). *Sandwiched generation caregivers: prevalence, characteristics, and outcomes*. Paper presented at the 18th annual conferences of the Society for Industrial and Organizational Psychology, Orlando, FL.
- Hanson, G. C., Hammer, L. B., & Colton, C. L. (2006). Development and validation of a multidimensional scale of perceived work-family positive spillover. *Journal of Occupational Health Psychology, 11*(3), 249-265.
- Hill, E. J. (2005). Work-family facilitation and conflict, working fathers and mothers, work-family stressors and support. *Journal of Family Issues, 26*(6), 793-819.
- Jaga, A., & Bagraim, J. (2011). The relationship between work-family enrichment and work-family satisfaction outcomes. *South African Journal of Psychology, 41*(1), 52-62.
- Jaga, A., Bagraim, J., & Williams, Z. (2013). Work-family enrichment and psychological health. *SA Journal of Industrial Psychology, 39*(2), 1-10.
- Kahn, R. L., Wolfe, D. M., Quinn, R., Snoek, J. D., & Rosenthal, R. A. (1964). *Organizational stress*. New York, NY: Wiley.
- Karatepe, O. M., & Bekteshi, L. (2008). Antecedents and outcomes of work-family facilitation and family-work facilitation among frontline hotel employees. *International Journal of Hospitality Management, 27*, 517-528.

- Katz, D., & Kahn, R. L. (1978). *The social psychology of organizations* (2nd ed.). New York, NY: Wiley.
- Kirchmeyer, C. (1992a). Nonwork participation and work attitudes: A test of scarcity vs. expansion models of personal resources. *Human Relations, 45*, 775-795.
- Kirchmeyer, C. (1992b). Perceptions of nonwork-to-work spillover: Challenging the common view of conflict-ridden domain relationships. *Basic and Applied Social Psychology, 13*, 231-249.
- Kirchmeyer, C. (1993). Nonwork-to-work spillover: A more balanced view of the experiences and coping of professional women and men. *Sex Roles, 28*, 531-552.
- Kriek, H. (1998). *Fairness and equity: New legislation will help to increase the best practice of occupational testing*. Jul/Aug Newslines, SHL South Africa.
- Lewis, S. (1999). An international perspective on work-family issues. In S. Parasuraman, & J. H. Greenhaus (Eds.), *Integrating work and family: Challenges and choices for a changing world* (pp. 91-104). Westport, CT: Praeger.
- Marks, S. R. (1977). Multiple roles and role strain: Some notes on human energy, time and commitment. *American Sociological Review, 42*, 921-936.
- Masuda, A. D., McNall, L. A., Allen, T. D., & Nicklin, J. M. (2012). Examining the constructs of work-family enrichment and positive spillover. *Journal of Vocational Behavior, 80*, 197-210.
- Mellor, S., Mathieu, J. E., Barnes-Farrell, J. L., & Rogelberg, S. G. (2001). Employees' nonwork obligations and organizational commitments: A new way to look at the relationship. *Human Resource Management, 40*(2), 171-184.
- Mesmer-Magnus, J. R., & Viswesvaran, C. (2005). Convergence between measures of work-to-family and family-to-work conflict: A meta-analytic examination. *Journal of Vocational Behaviour, 67*, 215-232.
- Parasuraman, S., & Greenhaus, J. H. (2002). Toward reducing some critical gap in work-family research. *Human Resource Management Review, 12*, 299-312.
- Pittman, J. F., & Orthner, D. K. (1988). Predictors of spousal support for the work commitments of husbands. *Journal of Marriage and the Family, 50*, 335-348.
- Powell, G. N., & Greenhaus, J. H. (2006). Is the opposite of positive negative? Untangling the complex relationship between work-family enrichment and conflict. *Career Development International, 11*(7), 650-659.

- Premeaux, S. F., Adkins, C. L., & Mossholder, K. W. (2007). Balancing work and family: A field study of multi-dimensional, multi-role work-family conflict. *Journal of Organizational Behaviour*, 28, 705-727.
- Rashid, W. E. W., Nordin, M. S., Omar, A., & Ismail, I. (2011). Social support, work-family enrichment and life satisfaction among married nurses in health service. *International Journal of Social Science and Humanity*, 1(2), 150-155.
- Robinson, J. P., Shaver, P. R., & Wrightsman, L. S. (1991). Criteria for scale selection and evaluation. In J. P. Robinson, P. R., Shaver, & L. S. Wrightsman (Eds.), *Measures of personality and social psychological attitudes* (pp. 1-16). New York, NY: Academic Press.
- Roodt, G. (1998). Challenges in psychological assessment. *People Dynamics*, 16(11), 30-34.
- Rothbard, N. P. (2001). Enriching or depleting? The dynamics of engaging in work and family roles. *Administrative Science Quarterly*, 46, 655-684.
- Ruderman, M. N., Ohlott, P. J., Panzer, K., & King, S. N. (2002). Benefits of multiple roles for managerial women. *Academy of Management Journal*, 45, 369-386.
- Schreuder, A. M. G., & Theron, A. L. (2001). *Careers: An organizational perspective*. Cape Town, South Africa: Juta.
- Schultheiss, D. E. P. (2006). The interface of work and family life. *Professional Psychology: Research and Practice*, 4, 334-341.
- Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive Psychology: An introduction. *American Psychologist*, 55, 5-14.
- Shein, J., & Chen, C. P. (2011). *Work-family enrichment: A research of positive transfer*. Toronto: Sense.
- Sieber, S. D. (1974). Toward a theory of role accumulation. *American Sociological Review*, 39, 567-578.
- Staines, G. L. (1980). Spillover versus compensation: A review of the literature on the relationship between work and nonwork. *Human Resources*, 33, 111-129.
- Stephens, M. A., Franks, M. M., & Atienza, A. A. (1997). Where two roles intersect: Spillover between parent care and employment. *Psychology and Aging*, 12, 30-37.
- Stephens, M. A., & Franks, M. M. (1995). Spillover between daughters' roles as caregiver and wife: Interference or enhancement? *Journal of Gerontology: Psychological Sciences*, 50B(1), 9-17.

- Stephens, G. K., & Sommer, S. M. (1996). The measurement of work to family conflict. *Educational and Psychological Measurement, 56*, 475-486.
- Stevens, D. P., Minnote, K. L., Mannon, S. E., & Kiger, G. (2007). Examining the neglected side of the work/family interface. *Journal of Family Issues, 28*(2), 242-262.
- Sumer, H. C., & Knight, P. A. (2001). How do people with different attachment styles balance work and family? A personality perspective on work-family linkage. *Journal of Applied Psychology, 86*, 653-663.
- Tiedje, L. B., Wortman, C. B., Downey, G., Emmons, C., Biernat, M., & Lang, R. (1990). Women with multiple roles: Role-compatibility perceptions, satisfaction, and mental health. *Journal of Marriage and the Family, 52*, 63-72.
- Voydanoff, P. (2001). Conceptualizing community in the context of work and family. *Community, Work, and Family, 4*, 133-156.
- Voydanoff, P. (2002). Linkages between the work/family interface and work, family and individual outcomes. *Journal of Family Issues, 23*, 138-164.
- Voydanoff, P. (2004). The effects of work demands and resources on work-to-family conflict and facilitation. *Journal of Marriage and Family, 66*, 398-412.
- Voydanoff, P. (2007). *Work, family, and community: Exploring interconnections*. Mahwah, NJ: Lawrence Erlbaum.
- Wayne, J. H., Grzywacz, J. G., Carlson, D. S., & Kacmar, K. M. (2007). Work-family facilitation: A theoretical explanation and model of primary antecedents and consequences. *Human Resource Management Review, 17*, 63-76.
- Wayne, J. H., Randel, A. E., & Stevens, J., (2003, April). *Individual, work, and family correlates of work-family facilitation*. Paper presented at the 18th annual conferences of the Society for Industrial and Organizational Psychology, Orlando, FL.
- Zedeck, S., & Mosier, K. L. (1990). Work in the family and employing organization. *American Psychologist, 45*(2), 240-251.

CHAPTER 3

RESEARCH ARTICLE 2:

This article was submitted and successfully accepted and published in the South African Journal of Industrial Psychology 2013.

De Klerk, M., Nel, J. A., Hill, C. & Koekemoer, E. (2013). The development of the MACE Work-Family Enrichment Instrument. *South African Journal of Industrial Psychology*, 39(2), 1-16.

THE DEVELOPMENT OF THE MACE WORK-FAMILY ENRICHMENT INSTRUMENT

Abstract

Orientation – An instrument based on a theoretical model is necessary to measure the positive side of the work-family interface.

Research purpose – The purpose of the study was to develop items for measurement of work-family enrichment based on the elements contained within a theoretical model and to evaluate the latent trait functioning of these items.

Motivation – Major limitations exist regarding the conceptualisation and scale development of the positive side of the work-family interface.

Research design, approach, and method – A quantitative research approach using scale development procedures was employed to develop the 95-item MACE Work-Family Enrichment Instrument. A cross-sectional survey design was used to collect data randomly from selected employees; the data were processed using Rasch analysis.

Main findings – The five-category scale works well for the most part, although a four-category scale could be considered; thirty-five items either over-fitted or under-fitted the work-family enrichment model; Person ability was measured in the low to middle ranges of work-family enrichment; Participants' experience of work-family enrichment could be represented accurately; Sub-scale items displayed misfit, bias, or both.

Practical implications – The developed instrument can be investigated further to identify work-family enrichment factors that can measure workers' experience of enrichment in their work and family domains.

Contribution – This study furthers theory building and empirical research, by developing a new theory-based measuring instrument for the positive side of the work-family interface in the South African context. This study expanded on the work-family enrichment model proposed by Greenhaus and Powell (2006), by including all five categories of resource gains.

Keywords – Work-family enrichment, family-work enrichment, scale development, Rasch analysis

Introduction

Due to the increase of women in the workforce, dual-career couples, single-parent households and fathers who are actively involved in parenting, employees may find it difficult to combine their work and family obligations (Aryee, Srinivas, & Tan, 2005; Paoli, 1997; Polach, 2003; Schreuder & Theron, 2001). Employees can experience a certain degree of conflict between the two domains (i.e. work and family). In the past few decades, research on work-family interaction focused almost exclusively on the negative impact of work on the family situation (i.e. work-family conflict). There is a growing awareness that work and family roles may have beneficial and reciprocal effects on one another and that focusing heavily on the negative side has left a gap in our understanding of the work-family interface (Grzywacz, 2000; Parasuraman & Greenhaus, 2002; Rothbard, 2001; Voydanoff, 2002). Therefore, it seems necessary to investigate the positive side of the work/family interface.

The work-family enrichment model offers the broadest conceptualisation of the positive side of the work-family interface (McNall, Nicklin, & Masuda, 2010). The model was developed by Greenhaus and Powell in 2006 (see Greenhaus & Powell, 2006) and is bidirectional in nature (Greenhaus & Allen, 2011). This means that it measures to what extent certain resources gained from an individual's work life can improve that person's family life as well as to what extent resources gained from family life improve the work life in turn. The model consists of two main components that outline the theoretical framework of work-family enrichment; (1) the *resources* generated in work and family roles and (2) the *paths* that promote work-family enrichment in each role (Greenhaus & Powell, 2006).

A resource can be described as “an asset that may be drawn on when needed to solve a problem or cope with a challenging situation” (Greenhaus & Powell, 2006, p. 80). Greenhaus and Powell (2006) identified five types of resources to promote enrichment: (1) *skills and perspectives* referring to cognition, interpersonal, and multi-tasking skills and ways of defining problems or situations; (2) *psychological and physical resources* referring to self-esteem, optimism and physical health; (3) *social-capital resources* referring to influence and information derived from interpersonal relationships in work and family roles; (4) *flexibility* referring to discretion in the

timing, pace, and location at which role requirements are met; and (5) *material resources* referring to money and gifts derived from the work or family domains.

These resources may have an instrumental or affective effect on a person's work and family life. Resources generated in Role A can promote a high performance and positive affect (or positive emotions and attitude) in Role B (Carlson, Kacmar, Wayne, & Grzywacz, 2006; Greenhaus & Powell, 2006). A resource (e.g. skills and perspectives, psychological and physical, socio-capital, flexibility and material) can be transferred directly from Role A to Role B, thereby enhancing performance in Role B (Greenhaus & Powell, 2006). This process is referred to as the *instrumental path*, because the application of a resource has a direct instrumental effect on performance in another role (Greenhaus & Powell, 2006). Furthermore, a resource generated in Role A can promote positive affect (or positive emotions and attitude) within Role A, which, in turn, produces high performance and positive affect in Role B. This process is referred to as the *affective path* (Greenhaus & Powell, 2006). Empirical evidence supports the existence of these two paths through which resources are transferred in both directions: both the direct instrumental path (Hunter, Perry, Carlson, & Smith, 2010; Weer, Greenhaus, & Linnehan, 2010) and the indirect affective path (Siu *et al.*, 2010).

According to Carlson *et al.* (2006), as well as Hanson, Hammer and Colton (2006), constructs such as work-family positive spillover, work-family enhancement and work-family facilitation can all be categorised under the concept of work-family enrichment. Both concepts of work-family enrichment and of work-family positive spillover incorporate the notion that experiences or resources in one domain (work or family) can be transferred (spilled over) to the other domain (family or work) (see Edwards & Rothbard, 2000; Greenhaus & Powell, 2006; Grzywacz & Marks, 2000; Hanson *et al.*, 2006). Work-family enrichment, however, requires more than the transfer (i.e. spillover) of experiences or resources from one domain to the other. The transfer should also be applied successfully in a way that leads to improved performance or affect for the individual (Powell & Greenhaus, 2006).

On the other hand, work-family enrichment and work-family facilitation are more closely linked, since the facilitation focuses on the positive outcomes of the work/family interface. However,

enrichment entails more than improvement in the role-performance of individuals' lives (Wayne, Grzywacz, Carlson, & Kacmar, 2007); it focuses on the individual and on the resources that assist improvement in their work or family life, whilst facilitation focuses on the system as such (i.e. work or family). Facilitation on the other hand aims at improving the entire system's functioning for the individual (Wayne *et al.*, 2007). By focusing more on the individual level, researchers may get a clearer picture of the person's experiences and resources that may spill over across domains, leading to enhanced functioning in both domains and therefore a better quality of life.

Research purpose and objectives

The objective of this study was to develop items for the measurement of work-family enrichment based on all the elements contained within the theoretical model and to evaluate the latent trait functioning of these items.

Contribution to the field

Given the aforementioned discussion, there is a clear need to expand current literature on the positive side of the work/family interface, especially within the South African context. Therefore, it seems relevant to develop a new instrument with which to measure work-family enrichment based on all five categories of resource gains described by Greenhaus and Powell (2006) in their conceptual and theoretical model. Carlson *et al.* (2006) did develop the first work-family enrichment scale, but did not limit themselves to only the five categories of resource gains, as indicated in Greenhaus and Powell's' model. Therefore, it can be assumed that by not including all the resources in their scale, the resources depicted in the work-family model were measured only partially. In order for us to see if these five resources gained as outlined by Greenhaus and Powell are possible, we employed the Item response theory (IRT) using the Rasch analysis technique to distinguish on what level items performed and to identify items with the best fit to a multidimensional model and items to be removed due to differential functioning between different demographic groups in South Africa.

What will follow?

Against this background, this article aims to report on the exploration of the measurement of work-family enrichment. This is done by investigating the advantages and shortcomings of an existing instrument measuring work-family enrichment, and by discussing the relevance of work-family enrichment in the workplace.

Literature review

Measurement of work-family enrichment

Carlson *et al.* (2006) presented the first empirically valid 18-item self-report measure for work-family enrichment, namely the Work-Family Enrichment Scale (WFES). The WFES captures the extent to which resource gains that are experienced in one domain are transferred to the other domain in ways that lead to improved quality of life in one role for the individual (Carlson *et al.*, 2006). Besides taking the direction of work-family enrichment (WFE) into account, Carlson *et al.* (2006) identified three dimensions associated with each direction. The three dimensions for work to family are: (1) development, (2) affect, and (3) capital; the three dimensions from family to work include: (1) development, (2) affect, and (3) efficiency.

Prior research using the dimensions/resources from the WFES has provided some empirical support for relations to antecedents, such as job and home resources as well as for outcomes, such as satisfaction experienced in the different spheres: life, job, family and career. Antecedent factors of enrichment consist of individual and environmental characteristics, which contribute to the acquisition and effective transfer of resources across domains (Carlson *et al.*, 2006). It was found that autonomy as a job resource is not as closely related to WFE capital as is the case with development and affect, whilst the relationship with a supervisor was found to be more closely related to affect and capital than to development (McNall *et al.*, 2010). Family/home support as a resource was positively related to family-work enrichment (FWE) (Bhargava & Baral, 2009). Regarding the study of outcomes, there are unfortunately not enough studies to examine the relationship between FWE and life satisfaction (McNall *et al.*, 2010). However, both work-to-

family enrichment (WFE) and family-to-work enrichment (FWE) showed a positive relationship with job satisfaction and family satisfaction (Bhargava & Baral, 2009; McNall *et al.*, 2010). In South Africa, a study employing the WFES instrument found that family satisfaction is positively related to all three sub-constructs of FWE, whilst both career and job satisfaction were positively related to all three sub-constructs of WFE (Jaga & Bagraim, 2011).

The WFES offers several advantages of measuring work-family enrichment. (1) It includes both work-to-family and family-to-work directions; (2) It captures the complexity of the construct of work-family enrichment by including resources gained in one domain, their transfer to another domain, and their successful application within the receiving domain, which is represented by enhanced functioning; (3) It was developed systematically to take into account multiple dimensions of potential enrichment; (4) It used established methodological procedures to develop the scale; (5) The scale was tested across five samples; (6) It was validated in various ways; and (7) It has been assessed in relation to potential antecedents and outcomes as suggested in the existing literature.

The WFES is therefore currently seen as the strongest instrument for measuring the positive side of the work/family interface from the literature because of the instrument's theoretical foundation and its reported solid evidence of validity and reliability (Carlson *et al.*, 2006; Carlson & Grzywacz, 2008; Jaga & Bagraim, 2011; McNall *et al.*, 2010; Stoddard & Madsen, 2007).

Despite the above strengths, there are a few concerns about employing the WFES. Firstly, each item seems to convey different elements and not a singular idea (Carlson & Grzywacz, 2008). For example, the item, '*My involvement in my work makes me cheerful and this helps me to be a better family member*', requires the respondents to assess whether their involvement in work makes them cheerful, and whether being cheerful actually turns them into a better family member. Secondly, items of the WFES were seen to be double-barrelled (Carlson & Grzywacz, 2008). According to MacDermid (2005), such double-barrelled items might be considered cognitively challenging to the respondent. An example of a double-barrelled item is, '*My involvement in my work puts me in a good mood and this helps me be a better family member.*'

This item may confuse respondents, because the first half of the item refers to work, whilst the second half refers to family. Therefore, respondents primarily may have responded to the first part of the item (work context) and to the affective referent, but not to the second part of the item (family member) (Hennessy, 2007). Lastly, Carlson *et al.* (2006) did not include all five categories of resources that were gained as proposed by Greenhaus and Powell's (2006) work-family enrichment model. Such resources from the work-family enrichment model are skills and perspectives, psychological and physiological resources, as well as social-capital resources, flexibility, and material resources.

In summary, it is clear that no other comprehensive models thus far deals with the positive work-family interface. Therefore, it has been recommended that measuring instruments for the positive work-family interface should be developed that are based on the work-family enrichment model (Carlson & Grzywacz, 2008; Carlson *et al.*, 2006; Greenhaus & Powell, 2006). Such an instrument will be useful in distinguishing the enrichment construct from other positive work-family interface constructs. The instrument will also be helpful in representing the benefits gained by combining work and family domains, which could result in a better quality of life for the individual. Moreover, the results of employing such an instrument could be utilised for further theory building and future research on the positive side of the work/family interface.

From the above mentioned literature, the following hypotheses can be suggested for the present study.

Hypotheses

The following hypotheses were tested in order to achieve the objectives of the study:

- **Hypothesis 1:** A new comprehensive instrument for work-family enrichment can be developed that is suitable for the South African context, based on the model proposed by Greenhaus and Powell (2006).
- **Hypothesis 2:** All five dimensions can be measured of work-family enrichment as proposed by the model of Greenhaus and Powell (2006).

- **Hypothesis 3:** Item performance does exist by conducting bias and equivalence of the newly developed measuring instrument.

Research design

Research approach

The current study followed a quantitative research approach with a methodological focus on developing a new scale for data collection on work-family enrichment (see Mouton, 2001). This consisted of an empirical study, which employed primary numerical data gathered from natural field settings by means of a survey (see Mouton, 2001).

Research method

Phase 1: Scale development procedure

The procedures followed in developing the new scale closely adhered to those described by DeVellis (2003) in the psychometric and scale development literature. These procedures included were narrowed down to four-steps, i.e. 1) the conceptualisation of the construct, 2) item generation and item evaluation, 3) item development and 4) item refinement.

Conceptualisation of the construct

The first step in the development of the new scale was to define the construct being measured. Building from the theoretical framework provided by Greenhaus and Powell (2006), work-family enrichment was defined as:

The extent to which a variety of resources from work and family roles have the capacity to encourage individuals' and to provide positive experiences, which enhance the individuals' quality of life (performance and positive affect) in the other role.

The idea was to develop items that contain the resources gained and enhanced functioning for the individual. A resource is an asset that may be drawn on when needed to solve a problem or cope with a challenging situation (Greenhaus & Powell, 2006). The generation of resources is a crucial driver of the enrichment process (Greenhaus & Parasuraman, 1999; Greenhaus & Powell, 2006; Grzywacz, 2002).

The resources developed for the instrument was based on the Greenhaus and Powell (2006) model and included all five categories of resources (e.g. skills and perspectives; psychological and physical, social-capital, flexibility and material resources) for each direction (work to family and family to work). However, because of the broad array of potential resources in Greenhaus and Powells' (2006) model, it was decided the five categories of resources gains should be divided into eight resources for the work to family direction (e.g. skills, perspectives, psychological self-concept, psychological positive affect, physical, socio-capital, time management/flexibility and material resources) and seven resources for the family to work direction (e.g. skills, perspectives, psychological self-concept, psychological positive affect, physical, socio-capital and time management/flexibility). By including more resources to each direction it will provide a more inclusive idea of each sub-construct/resource. This will also determine empirically whether distinct resources gains, such as gaining new skills, or gaining new perspectives, created a single or multiple sub-construct/resource.

The following definitions guided by the theory of Greenhaus and Powell (2006) were developed to describe the different resources that were included in the new scale. These include the following:

- *Skills* are the extent to which participation in the work/family role leads to the acquisition or refinement of skills that improve the individual's quality of life in the family/work role.
- *Perspectives* are the extent to which participation in the work/family role leads to the acquisition or refinement of perspectives and values that improve the individual's quality of life in the family/work role.

- *Psychological* is the extent to which participation in the work/family role leads to the acquisition or refinement of self-concept and positive affect that improves the individual's quality of life in the family/work role.
- *Physical* is the extent to which participation in the work/family role leads to acquisition and refinement of increased energy levels and mental sharpness that improve the individual's quality of life in the family/work role.
- *Socio-capital* is the extent to which participation in the work/family role leads to the acquisition or refinement of the maintaining of relationships and support that improve the individual's quality of life in the family/work role. Support in this regard is viewed as support provided by others (emotional support or social support).
- *Time management (Flexibility)* is the extent to which participation in the work/family role provides the ability to determine the timing and pace at which role requirements are met that improve the individual's quality of life in the family/work role.
- *Material resources* are the extent to which participation in the work role leads to the acquisition or refinement of material resources that improve the individual's quality of life in the family role. Material resources in this regard are viewed as monetary rewards (e.g. income, and remuneration).

In the present study, a distinction is made between work-to-family enrichment (WFE) and family-to-work enrichment (FWE). An individual's work domain represents the most prominent and vital aspects that this person has in his/her work environment, which will have a meaningful influence on his/her family life. Family life, on the other hand, relates to those fundamentally important aspects in the individual's family domain that subsequently impact significantly on that individual's work life. The measuring instrument items were developed and administered in English, since the South African workforce predominantly uses English as an official and commercial language within the business context (Hill & Van Zyl, 2003).

Item generation and item evaluation

An overall introduction statement was developed during the item generation process (e.g. "My work/family life is improved by") for the items of both the work to family enrichment direction

and family to work direction. This sentence was developed based on the second part of the work-family enrichment definition, to confirm whether enhancement/improvement did indeed occur after resources were transferred from the one dimension (e.g. work) and gained in the other dimension (e.g. family). The purpose of this sentence was to avoid items being double-barrelled and also to avoid items being too extensive.

For the next step, items from a preliminary item pool (133 items) were generated from measurements of existing research scales. These scales included the Work-Family Enrichment Scale, the Multidimensional Scale of Perceived Work-Family Positive Spillover, and the National Survey of Midlife Development in the United States. These scales measure the positive side of the work-family interface (Carlson *et al.*, 2006; Dyson-Washington, 2006; Fisher, Bulger, & Smith, 2009; Hanson *et al.*, 2006; Kirchmeyer, 1992a; Kirchmeyer, 1992b; Van Steenberg, Ellemers, & Mooijaart, 2007; Voydanoff, 2004; Wagena & Geurts, 2000). The items of the previous scales were generated and modified to fit the definitions of the various work-family enrichment sub-constructs/resources.

An additional 161 items, guided by the various definitions, were developed by the researchers for each sub-construct/resource. These items were developed according to the following criteria: 1) develop the items deductively according to each sub-construct/resource; 2) items must not be repetitive; 3) items must be clear to read and understand for each sub-construct/resource; 4) items must not be contradicting or ambiguous (Foxcroft & Roodt, 2009). After the generation and development of the items the following criteria were used to evaluate each item (DeVellis, 2003; Foxcroft & Roodt, 2009): 1) each item should reflect the definition of the sub-construct/resource it is intended to measure; 2) each items' wording should be clear and concise; 3) the appropriate grammatical structure and word choice for each item are important.

After the items (133 items from the existing literature and 161 self-developed) were evaluated based on general item development criteria (see DeVellis, 2003; Foxcroft & Roodt, 2009), the item pool was reduced to 110 items. This remaining pool of 110 items was sent to a panel of subject experts (researchers in the area of work-family enrichment) for evaluation. During the item evaluation process, a panel of subject experts (i.e. researchers in the area of work-family

enrichment) independently evaluated each item based on the following questions: 1) Do the definitions of the various resources reflect the overall definition of work-family enrichment? 2) Are the definitions of the various resources clear and understandable? 3) Does the content of the items tap into the definition of each resource of work-family enrichment? 4) Are there poorly-worded items? 5) Are there any double-barrelled items? 6) Are there difficult, trick items that require complex mental thinking? 7) Are there ambiguous items? The comments of these subject experts were then discussed and problematic items were identified for the purpose that followed. During this process of item evaluation, 15-items were discarded based on the evaluation criteria and comments from the subject experts.

The initial item pool was reduced to 95 items, some of which were adapted where necessary. The remaining 95 items again were scrutinised by national and international researchers, re-evaluating whether the items sufficiently tapped the content domain or sub-constructs/resources of work-family enrichment. These items were refined further, based on the researchers' observations.

Item development

During the item development phase, the remaining items from the initial item pool were carefully scrutinised and further developed and adapted where necessary. Items were also adapted in terms of wording for items to correspond with the selected response. It was decided to use a five-point Likert-type scale. Responses vary from strongly disagree (1) to strongly agree (5). Next, the items were classified into eight subscales/resources for the WFE direction (51 items: skills; perspectives; self-concept; psychological (positive affect); physical; socio-capital; time management and material resources) and seven subscales/resources for the FWE direction (44 items: skills; perspectives; self-concept; psychological (positive affect); physical; socio-capital and time management). Research subjects were asked to respond to the items by using a five-point Likert-type scale ranging between 0 (*Strongly disagree*) to 4 (*Strongly agree*). The measuring instrument was subsequently named the MACE Work-Family Enrichment Instrument.

Item refinement and item judgment

Following the item development process, a panel of two national researchers as well as an international researcher were asked to judge the items. The judges were provided with the construct as well as the sub-constructs/resources definitions. The judges were asked to evaluate whether the items sufficiently tap the content domain or sub-constructs/resources of the construct being assessed. The judges were also asked to evaluate item clarity and to indicate items that were difficult or ambiguous. Afterwards, some suggestions were made regarding item wording. Based on their inputs and feedback, changes were made to some of the items for refinement purposes.

Phase 2: Item evaluation with Rasch analysis

During the item refinement and item judgement process, 95 items were retained to measure work-family enrichment among employees. The objective of this study was to evaluate these 95 items with the Rasch model analysis (Rasch, 1960) in order to retain the best functioning items for future validation.

Research design

The research objectives were achieved by employing a cross-sectional survey design. During a cross-sectional design one group of people is observed at one point of time, in a short period, such as a day or a few weeks (Du Plooy, 2001). One advantage of cross-sectional research is that it is more economical in time and cost than other designs (Baltes, Reese, & Nesselroade, 1988). The design is also used to assess interrelationships among variables within a population and will thus help achieve the various specific objectives of this research (Struwig & Stead, 2001).

Research participants

The MACE Work-Family Enrichment Instrument was administered to a combined purposive and convenience non-probability sample of people working within the- South African context ($N =$

527). To be included in this sample, participants needed to have a permanent job and be involved in a family life. The survey booklet also contained a section explaining the research purpose and the process thereof. Fieldworkers duly communicated to the participants a standard introduction and orientation on the rationale of the research study. Participants were informed beforehand that their participation in the research project was voluntary. It was also pointed out to them that if they participated in the research and completed a questionnaire, that they gave their consent that the researcher could use the data for research purposes only.

The participants were 213 men and 311 women (and three participants who did not indicate their gender), with ages ranging between 20 and 72 ($M = 39$, $SD = 11.93$). The sample included participants from the four major South African race groups, White ($N = 426$), Black ($N = 69$), Coloured ($N = 22$), and Asian ($N = 4$); of these, six people did not indicate their race group. Most of the participants held a post-school qualification (60.2%); the remaining participants had either a school qualification (33.4%) or did not indicate their highest qualification obtained (6.5%).

Ethical considerations

Ethical considerations were taken into account during the planning and execution of the empirical study. The following paragraphs focus on the ethical aspects relevant to the research's goals.

Potential benefits and hazards

Participants were not exposed to any potential threats (physical, psychological or disclosure). Prior to the study, ethical clearance was obtained by each organisation involved and permission was obtained from the participants. Participants were only requested to participate in a survey that included questions on their work-family enrichment. All personal information gained from the participants was kept confidential and private. The participants were ensured that their responses would be used anonymously and for research purposes only.

Data protection

Only the researchers involved in the study were allowed to analyse or capture the data and ensured that the data that was collected was kept confidential. The completed questionnaires were protected at all times and kept in a safe, secure location, even after data capture and analysis.

Statistical analysis

Rasch analysis was conducted by applying the Rasch Unidimensional Measurement Model 2030: RUMM 2030 programme (Andrich & Sheridan, 2009). The use of Rasch analysis has recently increased, particularly in the development and analysis of questionnaires or research instruments (Hendriks, Fyfe, Styles, Skinner, & Merriman, 2012; Koekemoer, Mostert, & Rothmann, 2010; Prieto, Alonso, & Lamarca, 2003; Wright, 1996). However, only one study was found that employed the Rasch technique, particularly for scale development within the field of the work-family interface research (Koekemoer *et al.*, 2010). The technique is based on the Rasch analysis model, which is a probabilistic model determining the relationship between person ability and item difficulty or a separate endorsement for each unidimensional aspect (Andrich, 1988; Fox & Jones, 1998).

Rasch analysis is considered to be an ideal statistical technique that allows questionnaires or scales to be modified by re-scoring or removing items. Since this newly developed work-family enrichment instrument is still in the developmental stage, the researchers opted to employ the Rasch analysis technique to assess item performance. This is done instead of attempting to change the model of the trait, attitude or ability to fit the data based on the original questionnaire (Hendriks *et al.*, 2012). Therefore, the Rasch analysis provides an extensive range of information to assess the quality of items in a scale. This information includes various statistical and graphical tests to determine fit between the data and the model. Such combined information can be applied to make an overall conclusion on the quality of the scale, and to suggest possible modifications. The Rasch model is a probabilistic model that is ideal for unidimensional

measurements against which to judge new scales, such as the MACE Work-Family Enrichment Instrument proposed in the present study (see Andrich, 1988).

The statistical analyses are presented in the following order:

- thresholds;
- item location and fit to the model;
- item/person threshold distribution;
- differential item functioning;
- local item dependence;
- item location and fit of the items to the subscales.

Thresholds: Firstly, the response categories for each item were examined to determine whether they are working as expected. If a person scores low on a specific trait, that person will probably respond in the categories *Strongly disagree* (0) or *Disagree* (1). If a person scores high on the specific trait, that person will most likely respond in the *Agree* (3) or *Strongly agree* (4) categories. On the other hand, if the person scores in the middle of the represented trait, it is very likely that the person will respond to the *Neither disagree nor agree* (3) category. If the ordering of the response categories is, however, not working as intended, the estimates of those thresholds will not appear in their expected order. In such a case, where the threshold estimates are not appearing in their natural order, there is very little discrimination between the disordered categories. Therefore, the responses that are obtained for such categories are almost random in effect (Andrich & Sheridan, 2009). It is possible to combine disordered response categories post hoc and so try to determine which combination of categories may represent the data more accurately. However, once such categories have been executed, new data needs to be collected by referring to the collapsed categories to investigate how they are functioning (Andrich & Styles, 2004; Marais, Styles & Andrich, 2011).

Item location and fit to the model: Marais *et al.* (2011) suggest the use of statistical tests of fit and the location of items to establish evidence of misfit. The χ^2 test fit investigates the fit of the items to the model and the item locations. The locations are measured in logits, ‘an interval scale in which the unit intervals between the locations on the person-item map have a consistent value

or meaning' (Bond & Fox, 2007, p. 38). Item locations reflect the relative difficulty the respondents experienced in agreeing with items. This, in turn, indicated the location of particular items on the latent trait continuum: items with higher locations are more difficult to agree with than those with lower location parameters (de Bruin & de Bruin, 2011). A spread of approximately -3 to +3 logits is usually considered adequate. The locations of the items themselves helped to define the scale. Items with fit residuals closest to 0 will fit a proposed model best. Items with high positive fit residuals (>2.5) or high negative fit residuals (<-2.5) will fail to fit the model sufficiently. A negative fit residual indicates that the item is over-discriminating in relation to all items taken as a whole. In contrast, a positive value suggests that the item is less discriminating. Additionally, the Person Separation Index (PSI) is reported to investigate the reliability of the scales. The PSI, as defined by Bond and Fox (2007), represents an estimate of the spread of persons on the variable being measured. The PSI is a reliability indicator that is very similar to the traditional Cronbach's Alpha.

Item/person threshold distribution: Person and item locations are logarithmically transformed and plotted on the same continuum. This is done by using a common unit of measurement termed a logit; in this way ordinal data is converted to equal-interval data. In Rasch modelling, these logit values are named *locations* instead of *scores*. A person's location in logits is that individual's natural log odds for agreeing to a set of items. People with higher levels of the attitude under consideration have more positive endorsement of items and therefore indicate locations (in logits) that occur to the right of the scale. An item's location may be interpreted in terms of the relative difficulty that participants, as a whole, have in responding affirmatively to that item. Items located to the right of the continuum midpoint of 0 logits (i.e. with a positive logit value) are more difficult to endorse than those to the left (i.e. with a negative logit value), the item content helps to define more or less what the construct signifies. More intense items are likely to be affirmed only by persons who possess higher total scores on a set of items. In contrast, easier or less intense items are likely to be affirmed by many participants, including those who indicate a lower total of scores (Hendriks *et al.*, 2012). According to De Bruin and Buchner (2010), the test information curve may be applied to discriminate between those areas of the latent traits for which the scale functions most effectively, and those areas for which it operates least effectively.

Differential Item Functioning (DIF): An analysis of the DIF is carried out and the different groups within the sample are compared to determine whether the items of the WFE and of the FWE directions have the same meaning across sub-groups. DIF is done to determine whether different groups within a sample (e.g. gender or race) respond differently to an individual item – despite having the same levels of the latent trait. When DIF is present, the probability of an item response cannot be explained entirely by referring to the respondents’ levels of attitude and the difficulty they experience to endorse the item. The reason is that their performance is also influenced by another characteristic such as their gender or their age (Hagquist & Andrich, 2004). Furthermore, an item is considered to be biased if individuals from different groups with the same viewpoint on a trait differ in the probability of responding to the item in a specific manner (Urbina, 2004). An item may be biased if it contains content or language that is differentially familiar to subgroups of examinees. The said item may be language biased if it employs terms that are not commonly used state-wide or terms that have different connotations in different parts of the state (Foxcroft & Roodt, 2009; Murphy & Davidshofer, 2005).

Local item independence: Local item independence is the assumption that the items in a test should not be related to each other, and therefore can be evaluated by inspecting the residual correlation output to identify positive correlations exceeding 0.3 (Baghaei, 2007; Davidson, 2009; Marais *et al.*, 2011). According to Baghaei (2007) and Marais *et al.* (2011), when items share mutual information, it produces dependence on local items. This leads to biased parameter estimations and influences the unidimensionality of scales by indicating either the presence of subscales, or the redundancy of items. Marais *et al.* also suggest comparing the PSI of the complete sets of items with the various subsets of items representing the sub-scales. If the PSI for the subtest analysis decreases considerably compared to the PSI of the complete set of items, then the subtests should be analysed, rather than the complete set of items.

Item location and fit of the items to the subscales: Statistical tests of fit and the location of items to locate evidence of misfit were carried out separately on the different sub-scales. In addition, an analysis of DIF is carried out on the items from the various sub-scales and the different demographic groups (e.g. age, race, qualification, gender) within the sample were compared. This is done to determine whether item bias existed between groups with respect to

specific items of the sub-scales for the WFE as well as the FWE direction. Lastly, the total model fit for the subscales before and after eliminating the misfitting items were analysed by applying the χ^2 test of fit and the PSI.

Results

Thresholds

The thresholds for 12 items of the 95-item MACE Work-Family Enrichment Instrument did not operate as expected. Figure 1 presents this effect graphically for item MWF4 (*Having capital that enables me to purchase what is needed for my family*).

[insert Figure 1; see Appendix A]

From Figure 1, it is evident that the *Disagree* response category (1) is not clearly distinguishable from the adjacent response categories, especially the *Strongly disagree* (0) category. Given these results, the *Strongly disagree* (0) and *Disagree* (1) categories were collapsed into one category for the identified six items. Figure 2 presents an example of the Category Characteristics Curves (CCC) for one of the problematic items after the categories were collapsed (item MWF4, same item as in Figure 1).

[insert Figure 2; See Appendix A]

As indicated in Figure 2, all of the response categories now function as expected. Scores of 0 (Strongly disagree) and 1 (Disagree) were rescored as 0 (Disagree), a score of 2 was rescored as 1 (Neither disagree or agree), a score of 3 was rescored as 2 (Agree), and a score of 4 was rescored as 3 (Strongly agree).

The thresholds for the remaining 83 items of the MACE Work-Family Enrichment Instrument functioned as expected. The scale for these items therefore distinguishes clearly between the five categories (see Figure 3 for an example of the application of the CCC).

[insert Figure 3; See Appendix A]

Item location and fit to the model

The fit of the individual items to the item sets of both the WFE and FWE directions were examined separately through the log residual test of fit statistics for individual items and the interaction test of fit for items' traits (a chi-square test). The PSI was 0.97 for item sets of both the WFE and the FWE direction. However, due to the possibility of item dependency, this index of reliability could be exaggerated. Item dependency will be investigated later.

The fit of the items to the model and of the items' locations on the continuum were inspected to get proof of validity for both item sets of the WFE and the FWE direction. The spread of the item locations for item sets of both the WFE (-0.41 to 0.87 logits; SE: 0.05-0.06) and the FWE direction (-0.81 to 1.16; SE: 0.07-0.08) is in range and therefore adequate. Regarding the item set of the WFE direction, it seemed to be easier for people to agree with the statement of, for example, item PSWF1 (*My family life is improved by my work that provides me with a sense of accomplishment*). In contrast, it seemed to be rather difficult for people to agree with the statement contained in item PWF1 (*My family life is improved by the different values I come into contact with at work*). From the item set of the FWE direction, SOFW3 (*My work is improved by having good relationships in my family life*) was the easiest item for participants to agree with, while SFW2 (*My work is improved by the skills I learn in my family life*) was the most difficult item to agree with.

With regard to the fit residuals, eight items (FitRes = 2.89–6.74; $p = 0.000 - 0.190$; $\chi^2 = 11.21 - 83.74$) from the item set of the WFE direction (MWF1, MWF2, MWF3, MWF4, MWF6, MWF7, PWF1 and PWF2) and eight items from the item set of the FWE direction (PFW4, PFW5, TFW5, SFW1, SFW3, SFW4, SFW5 and TFW6) showed high positive fit residuals (FitRes = 2.57–5.95; $p = 0.000-0.210$; $\chi^2 = 10.89-76.68$). These items would most likely over-discriminate between persons' item locations and therefore fail to fit the model. Noticeably, all but one (MWF5) of the Material resources items from the item set of the WFE direction showed high positive fit residuals, indicating that this resource fails to fit the model. Furthermore, six items (FitRes = -2.57 – -3.58; $p = 0.001 - 0.044$; $\chi^2 = 15.89 - 27.50$) from the item set of the WFE direction (PSWF4, PSWF5, PSWF6, PHWF4, PHWF5 and PHWF6) and 13 items (FitRes

= -2.51 – -4.83; $p = 0.000 – 0.260$; $\chi^2 = 10.11 – 22.42$) from the FWE direction's item set (SOFW3, SOFW4, PPFW3, PPFW4, PPFW5, PHFW1, PHFW2, PHFW3, PHFW4, PHFW5, PSFW3, PSFW4 and PSFW5) showed high negative fit residuals. This indicates that these items would most likely under-discriminate between persons' item locations and therefore fail to fit the model. The item fit for the remaining WFE items ranged between -2.01 and 2.08 ($p = 0.001 – 0.985$; $\chi^2 = 1.86 – 26.12$) and for the remaining FWE items, the fit residuals ranged between -2.49 and 2.40 ($p = 0.000 – 0.980$; $\chi^2 = 1.89 – 29.31$). The fit of these items was deemed acceptable.

Item/person threshold distribution

The targeting of items and persons was assessed by viewing the person-item location distribution map. According to this map, the locations of persons are plotted together with that of item locations, or item threshold locations on the same continuum, as well as the item characteristic curve. The distributions of these threshold locations for persons and items are represented in Figure 4 and Figure 5 for both item sets of the WFE and the FWE directions.

[insert Figure 4; See Appendix A]

Figure 4 illustrates that the WFE direction item set is reasonably well spread around the mean and that the graph on person-item distribution shows that the persons' spread is more to the right of the mean, and therefore positively skewed. This indicates that a considerable number of participants are not narrowly targeted to the items although the items are covered by the item parameters. This will result in information about the persons at locations around three logits and more would not be very high (see Andrich & Sheridan, 2009).

[insert Figure 5; See Appendix A]

Figure 5 illustrates that, whilst the item set of the FWE direction is reasonably well and widely spread around the mean, some individuals are not narrowly targeted to the items. It is also evident from the results that the items are skewed positively. Although the items are covered by the item parameters, the person parameters are not completely covered by the items in turn.

Differential item functioning

Tables 1 and Table 2 indicate the differential item functioning (DIF) for both item sets of the WFE and the FWE directions respectively, determining whether different groups within a sample respond differently to an individual item.

[insert Table 1; See Appendix A]

From Table 1, it is apparent that there is no evidence of DIF from the WFE direction's item set within the gender; age; race; and qualification demographic groups. Therefore, direct comparisons of mean locations for these groups can be made, seeing as the construct has the same meaning across all sub-groups.

[insert Figure 6; See Appendix A]

Interpreting the mean locations (logits) of the WFE direction's item set as depicted in Table 1 to Figure 6, all groups fall in the Agree response category; with the Indian/Asian group inclining closer to the *Neither agree nor disagree* response category, and the Coloured group being closest to the *Strongly agree* response category with the statements in the item set of the WFE direction.

[insert Table 2; See Appendix A]

Table 2 indicates that there is no evidence of DIF from the FWE direction's item set within three of the four demographic groups, excluding race. Therefore, direct comparisons of mean locations can be drawn for the gender, age and qualification groups, seeing as the construct has the same meaning across all sub-groups. However, the different race groups seem to respond differently to the items from the FWE direction's item set. Therefore, further investigation is required. Relating the above mean locations (logits) to Figure 6, it becomes apparent that most groups on average were located in-between the *Agree* and *Strongly agree* response categories. The Coloured race group tended to agree more with the statements of the FWE direction's item set,

while the Black race group tended to agree more strongly with the statements of the FWE direction's item set.

Item dependencies

The inspection of the residual correlations between pairs of items in the current analysis reveals the existence of sub-scales. A summary was done of the indices of test-of-fit and the reliability of the subtest analysis, by using the eight sub-scales of the WFE direction and the seven sub-scales of the FWE direction separately. This summary revealed that 1) the PSI reliability of the WFE direction's sub-scales dropped significantly ($\hat{c} = 0.95$) from 0.97 to 0.88; and 2) the PSI reliability of the FWE direction's sub-scales dropped significantly ($\hat{c} = 0.73$) from 0.97 to 0.91. These results indicate that the eight and seven sub-scales of the WFE and the FWE directions might represent participants' agreement with the statements better than the two item sets of the WFE and the FWE directions. The association of the eight sub-scales of the WFE direction reveals that participants were more comfortable disagreeing with Time management items (item location -0.06) and found it easier to agree with statements from the Skills subtest (item location 0.08). When relating the seven sub-scales of the FWE direction, the results indicate that participants disagreed more easily with statements from the Perspectives sub-scale (item location -0.11) and were more comfortable agreeing with items from the Skills subtest (item location 0.17).

Based on these results, the eight subscales of the WFE direction, and the seven of the FWE direction, were analysed separately.

Item location and fit of the items to the subscales

The item locations and fit of items for the subscales of the WFE direction, the presence of DIF within the various demographic groups, as well as item fit after problematic items had been eliminated are presented in Table 3.

[insert Table 3; See Appendix A]

The results in Table 3 indicate that certain items for each of the subscales display either misfit (PWF1; PPWF4 and MWF7), bias (SWF3; PWF2; PSWF1; PPWF5; PPWF1; SOWF3; SOWF5 and SOWF2), or both (SWF5; PPWF6 and MWF5). With regard to the overall model fit for each of the subscales, the results indicate that model fit can be improved by omitting certain problematic items, although the PSI decreases slightly in each instance (see perspectives, self-concept, and material resources). However, in certain cases, deleting some misfitting items decreases the overall fit and undermines the reliability of the scale unnecessarily. The overall fit of the various subscales varies between good and excellent. The results suggest that 10 items could be considered for elimination from the final subscales of the WFE direction (SWF5; PWF1; PWF2; PSWF1; PPWF4; PPWF5; PPWF6; MWF1; MWF5 and MWF7).

Table 4 presents the item locations and the fit of items for the FWE direction's subscales, the presence of DIF within the various demographic groups, as well as item fit after problematic items had been eliminated.

[insert Table 4; See Appendix A]

As with the results of the WFE direction's subscales, the results for the FWE direction's subscales (Table 4) also reveal that three items from the various subscales displayed misfit (PHFW6; SOFW6 and TFW6), 14 items were shown to contain DIF (SFW6; PFW4; PFW6; PSFW2; PSFW3; PSFW5; PSFW4; PPFW3; PHFW4; PHFW3; PHFW5; SOFW3; SOFW5 and SOFW2), and one item displayed both misfit and bias (PPFW1). The total model fit for the various FWE subscales also varied between good and excellent. Analysis also revealed that deleting some misfitting items might improve model fit, but in other instances it would decrease the overall model fit needlessly. Based on the results, it can be recommended that nine items be omitted from future measurement of subscales of the FWE direction (PSFW4; PPFW1; PPFW3; PHFW5; PHFW6; SOFW5; SOFW6; TFW5 and TFW6).

In conclusion, overall 51 items were retained from the analysis, from which 31 items were reserved for the work-to-family direction. More specifically, these contained the following: 11 items for the work-family perspectives (WFP) dimension (including 5 items from the skills resource and 6 items from the perspectives resource); 8 items for the dimensions of work-family

affect (WFA) (which include 2 items from the self-concept resource, 3 items from the psychological resource and 3 items from the physical resource); 6 items for the work-family socio-capital (WFS) and 6 items for the dimension work-family time management (WFT). Furthermore, 20 items for the family-to-work direction were retained. More specifically it contained: 8 items for the dimensions of the family-work perspective (FWP) (including 2 items from the skills resource and 6 items from the perspective resource); 6 items for the family-work affect (FWA) dimension (including 3 items from the self-concept resource, 2 items from the psychological resource and 1 item from the physical resource); 3 items for the family-work socio-capital dimension (FWS) and 3 items for the family-work time-management dimension (FWT).

Discussion

The objective of this study was to develop items for the measurement of work-family enrichment based on all the elements contained within the theoretical model and to evaluate the latent trait functioning of these items. With the development of this new instrument, several of the theoretical and measuring limitations voiced by previous researchers were addressed. This strategy illustrates various distinct advantages of this instrument over previous positive work-family measurements. In addition, the Rasch rating scale was used to analyse the items that were developed for the MACE Work-Family Enrichment Instrument.

Outline of the results

When analysing data from questionnaires, a constructive early step in the process is to investigate the functioning of rating scale categories (Linacre, 2002). These categories relate to items that are scored on more than two categories. The results in this study indicated that 12 of the 92 items did not function according to the expected five-point Likert-type scale. The *Strongly disagree* and *Disagree* response categories proved to be problematic across all 12 items. It can therefore be deduced that the participants found it difficult to discriminate between these two categories when responding to the identified 12 items. Closer investigation of the item content did not reveal any plausible explanation why the participants found it difficult to discriminate

between these two categories for the 12 items. A reason that people would discriminate between *Strongly disagree* and *Disagree* might be that people find it socially undesirable to evaluate their positive work and family in extreme negative terms. It is rather more socially desirable to agree or strongly agree with positive elements with one's work and family life.

Linacre (2002) states that, for analytical purposes, the challenge are to verify that observations according to the rating scale conform reasonably closely to a specified model; therefore, the results recommended the collapse of these two categories for further analysis. According to Marais *et al.* (2011), the collapsing of categories should not be done in established questionnaires. However, since this questionnaire was still in its development phase, it was deemed acceptable to collapse these categories. According to Grimbeeck and Nisbet (2006), a fundamental issue with using a Likert-type scale is the problematic measurement properties of categories that require multi-choice responses per item. This warrants further investigation into the appropriate number of response categories for the MACE Work-Family Enrichment Instrument.

The Rasch analysis indicated that a total of 35 items from the item sets of both the WFE and the FWE directions either over-discriminated or under-discriminated between item locations of persons. The perspective resource items over-discriminated constantly in both the WFE and FWE item sets. The items that were over-discriminated against may indicate that the respondents were careless or less motivated in responding to the items (Hendriks *et al.*, 2012), and were therefore reluctant to answer with the relevant intensity. Furthermore, individuals might have had their own understanding of the wording of the items (e.g. 'values', 'perspectives') that differed from that of other individuals, or they might have attached different meanings to the wording in the items.

Additionally, items measuring the dimensions of physical and self-concept consistently under-discriminated between persons' item locations in the item sets of both the WFE and FWE directions. With regard to the under-discrimination of these items, participants may have been responding according to the same mental set or fixed pattern of thinking about the underlying trait (Hendriks *et al.*, 2012). A reason that might stem from the physical dimension may be that

individuals entertain the same idea or meaning of the wording (i.e. being energised) in the items, which provides no new information on the individual's experience of the physical dimension. For the self-concept dimension it may be suggested that all individuals experienced self-concept and were indicating a sense of self-worth in the same manner. This is because they answered the questions in the same way, and therefore provided no new information on how they experienced the self-concept dimension. Items are therefore not diversified (Andrich, 1988) and should be re-evaluated.

For the item set of the WFE direction, the items relating to self-concept, socio-capital, and time management were the easiest for participants to agree with. The reason that individuals found the self-concept dimension easier to agree with may be that a person finds it socially desirable to indicate that the self-worth or self-concept they experience in their work plays a positive role in their family life. Social desirability is the tendency of respondents to answer questions in a manner that will be viewed favourably by others. It can take the form of over-reporting 'good behaviour' or under-reporting 'bad' or undesirable behaviour (Paulhus, 1991). Respondents therefore over-report on the desirable behaviour as it might be seen as socially desirable. Furthermore, according to Carlson *et al.* (2006), employees are more likely to apply resources to their work role if occupation is more salient to their self-concept. Therefore, if one's self-concept is more closely linked to work as opposed to family, then positive spillover is likely to occur from work to family. Regarding the socio-capital dimension, it could be suggested that respondents found it easier to agree with these items because they found it easy to relate to, which indicates that these individuals experience a sense of support in their work and maintain good relationships with their co-workers; such support and the maintaining of good relationships at work might lead to lessened role pressures (Greenhaus & Beutell, 1985), resulting in workers being more prone to agree with the items.

Additionally, it may be suggested that participants found it easy to agree with the time management dimension, as their occupation might require them to have a work schedule enabling them to apply their time effectively (Sabil & Marican, 2011). This allows them to meet their work requirements in a sufficient time in the work domain, which in turn enhances their family domain by allowing them to spend sufficient time with their families. According to Kehoe

(1995), items that everyone found easy to agree with are impractical and should be replaced by more probing items that are more difficult to agree with.

Items relating to perspectives and skills were more difficult to agree with from the work to family enrichment direction. The reason that respondents found it difficult to agree with the perspective dimension might be due to the multicultural nature of the work environment consisting of employees with different viewpoints and values (Lewis, 1997). If individuals could not relate to some viewpoints and values of others, they would find it difficult to agree with and answer these items. It might also be that some participants did not understand the meaning of some of the words (i.e. 'perspectives', 'values', 'viewpoints') in the items and the result was that individuals found it more difficult to agree with this dimension. Furthermore, it is indicated that individuals found it more difficult to agree with the skills dimension. A possible explanation may be that participants found it hard to relate to the type of competencies gained from their work, that could be used in their family role to improve the quality of life in that domain. In addition, individuals might have found the wording of the items (i.e. 'competencies') too complicated.

For the item set of the family to work enrichment direction, the items representing the socio-capital and physical resources appeared to be easy to agree with. It seems plausible that respondents who found the socio-capital items from the family to the work enrichment direction easier to agree with, experience awareness that they are cared for and loved, respected and valued as a member of their families (Cobb, 1976). Furthermore, the physical resources items were also found to be the easiest to agree with from the FWE direction. The reason that respondents found these items easy to agree with might be that individuals' family environments make it possible for them to gain more energy and mental sharpness within their family domain. These resources, in turn, could be applied in their work, enhancing their work domain. The participants seemingly found it difficult to agree with the items of the skills dimension in the FWE direction. A reason for this might be that individuals find it difficult to understand the word 'skills' in the items and the type of skills that could be generated particularly in the family domain, that could be applied in their work role to better the quality of life in the work domain.

The distribution map of person-item threshold indicated the range over work-family enrichment for which the items in the item set of WFE and the FWE directions would be most useful and reliable when measuring persons' levels of ability through the measured construct. For both item sets, participants perceived the items to be relatively easy. Subsequently, those participants were rated high on work-family enrichment. The scale provides insufficient information on the higher ranges of work-family enrichment, and therefore represents an instrument that will provide more accurate information for people who operate in the middle to lower ranges of work-family enrichment. Examining the item content of item sets for both the WFE and the FWE directions, it can be hypothesised that possible reasons for the insufficient person reliability might be that the respondents misunderstood the items or that they were reluctant to answer the questions with the relevant intensity. Therefore, to ensure better person reliability, the wording and intensity of the items may have to be explored and adapted (Hendriks *et al.*, 2012).

Differential item functioning (DIF) was not present in either the WFE direction's item set, or in the item set of the FWE direction. With the absence of the DIF, the probability of the item response could be explained by the respondents' level of attitude and the fact that they found it difficult to endorse the item. The absence of DIF indicates that the work to family and family to work enrichment scale could be administered to participants of different genders, ages, races and qualifications, without the concern that the items may mean something different to each population sub-group. Therefore, direct comparisons of mean locations for these groups can be made as the construct has the same meaning across sub-groups (Hendriks *et al.*, 2012).

According to Baghaei (2007) and Marais *et al.* (2011), when items share mutual information, they produce dependence on local items. With regard to such local item dependence, the results indicated that the MACE Work-Family Enrichment Instrument is more differentiated than was considered initially. That is because there is a clear presence of subscales in item sets of both the WFE and the FWE directions. Participants' experience of work-family enrichment could therefore be represented in a more meaningful way by presenting a profile of how the different work-family enrichment resources were experienced, rather than making a solitary assessment on all items at once.

In the item sets of both the WFE and the FWE directions, various items displayed misfit, bias, or both. Deleting some of these items proved to better the overall model fit for each of these sub-scales, although at times it was done at the expense of the PSI. The PSI represents an estimate of the spread of persons on the variable that is measured (Bond & Fox, 2007). However, in some instances, the unnecessary deletion of problematic items decreased the overall fit and countered the reliability of the sub-scales. Overall, most items functioned acceptably.

With respect to the bias identified within the subscales for the WFE direction, the following results were obtained: qualification groups differed in their experience of the skills and self-concept sub-scales; race groups differed in terms of the perspectives, psychological and material sub-constructs; and gender groups differed in terms of the psychological sub-construct. A possible explanation for the gender differences could be that women experience more positive affect than men do from their work to their family roles, because women are more likely to integrate these roles, whereas men tend to segment or mentally separate work and family roles (Andrews & Bailyn, 1993). Women may experience and utilise resources differently than men do (Wayne *et al.*, 2007). Previous research suggests that women experienced higher levels of WFE compared to men (Van Steenbergen *et al.*, 2007). However, Rothbard (2001) found that men experienced greater WFE compared to women.

The bias found within the sub-scales for the FWE direction were related to differences between the various qualification groups on their experience of self-concept, socio-capital and time management. Furthermore, race groups differed in terms of the psychological and physical sub-scales; and age groups differed in terms of the physical sub-scale. Considering the difference in qualification based on the socio-capital sub-construct, it may be assumed that employees with a post-school qualification have more responsibilities at work. Furthermore, if these individuals experience more emotional and social support, as well as good relationships in their family lives, this might spill over to their work role, enabling them to take on these responsibilities in their workplace more easily than other individuals. Previous research therefore indicates that individuals with post-school qualifications experience higher FWE (Grzywacz & Marks, 2000; Voydanoff, 2004).

Practical implications

The results of the present study have expanded current literature of the positive side of the work/family interface by developing a measuring instrument that is based on a sound theoretical model and developed with rigorous scale development procedures. Furthermore this developed instrument can be investigated further to identify work-family enrichment factors that can measure workers' experience of enrichment in their work and family domains.

Limitations and Recommendations

Self-report questionnaires were employed to obtain the work-family enrichment scores. This was considered as a limitation in this study. The use of self-report questionnaires has been a source of debate in literature on organisational psychology (e.g. Spector, 1994), and has been criticised for leading to artificially inflated correlations when measuring psychological constructs. The subscales included in the present study, however, were most appropriately measured by asking employees to report their own attitudes and perceptions of work-family enrichment (Schmitt, 1994).

Another limitation that came to the fore was the large number of items that were initially included in the study to measure the various sub-constructs of the MACE Work-Family Enrichment Instrument. Some of the participants complained about the length of the questionnaire and that the items were too repetitive. This may have influenced the way in which participants responded to the items (e.g. by responding randomly).

Recommendations for future research studies using the MACE Work-Family Enrichment Instrument may include revising or eliminating items that proved to be biased or have shown misfit with the scale and sub-scales. Furthermore, it is recommended that it should be considered whether a four-point or five-point ratings scale will solicit more reliable results. Another recommendation could be to include items that will measure those respondents who scored high on work-family enrichment. Furthermore, it is recommended to explore the relevance of the material resources sub-scale on work-family enrichment, since the Work-Family Enrichment

Scale by Carlson *et al.* (2006) disregarded the measurement of material resources in its development.

Other recommendations for future research studies may include investigating the resources separately according to the work-family enrichment model, seeing that the MACE Work-Family Enrichment Instrument included eight resources for work to family, and seven resources for family to work. The model includes five resources for both directions. Some of the resources/categories theoretically collapsed together (i.e. perspectives and skills; self-concept, psychological and physical). Furthermore, it is recommended that the internal psychometric properties of the MACE Work-Family Enrichment Instrument (i.e. validity in terms of construct, convergent and discriminant; its reliability, etc.) should be investigated, as well as the external psychometric properties of the MACE Work-Family Enrichment Instrument (i.e. the relationship with antecedents and the consequences of work-family enrichment).

Conclusion

The results suggest that the MACE Work-Family Enrichment Instrument functions as a multi-dimensional instrument by covering the various work-family enrichment resources as proposed by Greenhaus and Powell (2006). The MACE Work-Family Enrichment Instrument is therefore based on a sound theoretical framework and should be developed and investigated further in order to identify work-family enrichment factors that can measure workers' experience of enrichment in their work and family domains.

References

- Andrews, A., & Bailyn, L. (1993). Segmentation and synergy: Two models linking work and family. In J.C. Hood (Ed.), *Men, work, and family* (pp. 262–275). Newbury Park, CA: Sage.
- Andrich, D. (1988). *Rasch models for measurement*. Newbury Park, CA: Sage.
- Andrich, D., & Sheridan, B. (2009). *Interpreting RUMM2030 (Part I)*. Perth, Australia: RUMM Laboratory.
- Andrich, D., & Styles, I. (2004). *Final report on the psychometric analysis of the Early Development Instrument (EDI) using the Rasch model: A technical paper commissioned for the development of the Australian Early Development Instrument (AEDI)*. Perth, Australia: Murdoch University.
- Aryee, S., Srinivas, E. S., & Tan, H. H. (2005). Rhythms of life: Antecedents and outcomes of work-family balance in employed parents. *Journal of Applied Psychology, 90*, 132-146.
- Baghaei, P. (2007). Local dependency and Rasch measures. *Rasch Measurement Transactions, 21*(3), 1105–1106.
- Baltes, P. B., Reese, H. W., & Nesselroade, J. R. (1988). *Introduction to research methods: Life-span developmental psychology*. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Bhargava, S., & Baral, R. (2009). Antecedents and consequences of work-family enrichment among Indian managers. *Psychological Studies, 54*, 213–225.
- Bond, T. G. B., & Fox, C. M. (2007). *Applying the Rasch model: Fundamental measurement in the Human Sciences*. Mahwah, NJ: Erlbaum.
- Carlson, D. S., & Grzywacz, J. G. (2008). Reflections and future directions on measurement in work-family research. In K. Korabik, D. S. Lebo, & D. S. Whitehead (Eds). *Handbook of work-family integration: Research, theory and best practices* (pp. 57–73). Oxford, UK: Elsevier.
- Carlson, D. S., Kacmar, K. M., Wayne, J. H., & Grzywacz, J. G. (2006). Measuring the positive side of the work-family interface: Development and validation of a work-family enrichment scale. *Journal of Vocational Behavior, 68*, 131–164.
- Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine, 38*, 300–314.

- Davidson, M. (2009). Rasch analysis of 24, 18 and 11 item versions of the Roland-Morris Disability Questionnaire. *Quality of Life Research, 18*, 473–481.
- De Bruin, G. P., & Buchner, M. (2010). Factor and item response theory analysis of the Protean and Boundaryless Career Attitude Scales. *SA Journal of Industrial Psychology, 36*(2), 932–943.
- De Bruin, K., & De Bruin, G. P. (2011). Development of the Learner Self-Directedness in the Workplace Scale. *SA Journal of Industrial Psychology, 37*(1), 926–936.
- DeVellis, R. F. (2003). *Scale development, theory and application* (2nd edn.). Thousand Oaks, CA: Sage.
- Du Plooy, G. M. (2001). *Communication research: Techniques, methods and applications* (2nd ed.). Cape Town, South Africa: Juta & Co. Ltd.
- Dyson-Washington, F. (2006). *The relationship between optimism and work-family enrichment and their influence on psychological well-being* (Unpublished doctoral thesis). Drexel University, Philadelphia, PA, United States of America.
- Edwards, J. R., & Rothbard, N. P. (2000). Mechanisms linking work and family: Clarifying the relationship between work and family constructs. *Academy of Management Review, 25*, 178–199.
- Fisher, G. G., Bulger, C. A., & Smith, C. S. (2009). Beyond work and family: A measure of work/nonwork interference and enhancement. *Journal of Occupational Health Psychology, 14*(4), 441–456.
- Fox, C. M., & Jones, J. A. (1998). Uses of Rasch modelling in counselling psychology research. *Journal of Counseling Psychology, 45*, 30–45.
- Foxcroft, C., & Roodt, G. (2009). *An introduction to psychological assessment in the South African context*. Cape Town, South Africa: Oxford University Press.
- Greenhaus, J. H., & Allen, T. D. (2011). Work-family balance: A review and extension of the literature. In J. C. Quick, & L. E. Tetrick (Eds.), *Handbook of occupational health psychology* (2nd ed.) (pp. 165–183). Washington, DC: American Psychological Association.
- Greenhaus, J. H., & Beutell, N. J. (1985). Sources of conflict between work and family roles. *Academy of Management Review, 10*, 76–88.
- Greenhaus, J. H., & Powell, G. N. (2006). When work and family are allies: A theory of work-family enrichment. *Academy of Management Review, 31*(1), 72–92.

- Grimbeeck, P., & Nisbet, S. (2006). Surveying primary teachers about compulsory numeracy testing: Combining factor analysis with Rasch analysis. *Mathematics Education Research Journal*, *18*(2), 27–39.
- Grzywacz, J. G. (2000). Work-family spillover and health during midlife: Is managing conflict everything? *American Journal of Health Promotion*, *14*(4), 236–243.
- Grzywacz, J. G., & Marks, N. F. (2000). Reconceptualizing the work-family interface: An ecological perspective on the correlates of positive and negative spillover between work and family. *Journal of Occupational Health Psychology*, *5*, 111–126.
- Hagquist, C., & Andrich, D. (2004). Is the Sense of Coherence-instrument applicable on adolescents? A latent trait analysis using Rasch-modelling. *Personality and Individual Differences*, *36*, 955–968.
- Hanson, G. C., Hammer, L. B., & Colton, C. L. (2006). Development and validation of a multidimensional scale of perceived work-family positive spillover. *Journal of Occupational Health Psychology*, *11*(3), 249–265.
- Hendriks, J., Fyfe, S., Styles, I., Skinner, R., & Merriman, G. (2012). Scale construction utilising the Rasch unidimensional measurement model: A measurement of adolescent attitudes towards abortion. *Australasian Medical Journal*, *5*(5), 251–261.
- Hennessy, K. D. (2007). *Work-family balance: An exploration of conflict and enrichment for women in a traditional occupation*. Unpublished doctoral dissertation, University of Maryland, College Park, MD, United States of America.
- Hill, P., & Van Zyl, S. (2003). English and multilingualism in the South African engineering workplace. *Work Englishes*, *21*(1), 23–35.
- Howard, G. S. (1994). Why do people say nasty things about self-reports? *Journal of Organizational Behavior*, *15*, 399–404.
- Hunter, E. M., Perry, S. J., Carlson, D. S., & Smith, S. A. (2010). Linking team resources to work-family enrichment and satisfaction. *Journal of Vocational Behavior*, *77*, 304–312.
- Jaga, A., & Bagraim, J. (2011). The relationship between work-family enrichment and work-family satisfaction outcomes. *South African Journal of Psychology*, *41*(1), 52–62.
- Kehoe, J. (1995). Basic item analysis for multiple-choice tests. *Practical Assessment, Research & Evaluation*, *4*(10). Retrieved April 30, 2013, from <http://PAREonline.net/getvn.asp?v=4&n=10>

- Kirchmeyer, C. (1992a). Nonwork participation and work attitudes: A test of scarcity vs. expansion models of personal resources. *Human Relations*, *45*, 775–795.
- Kirchmeyer, C. (1992b). Perceptions of nonwork-to-work spillover: Challenging the common view of conflict-ridden domain relationships. *Basic and Applied Social Psychology*, *13*, 231–249.
- Koekemoer, E., Mostert, K., & Rothmann, S. Jr. (2010). Interference between work and nonwork roles: The development of a new South African instrument. *SA Journal of Industrial Psychology/SA Tydskrif vir Bedryfsielkunde*, *36*(1), 1–4.
- Lewis, S. (1997). An international perspective on work-family issues. In S. Parasuraman, & J. H. Greenhaus (Eds.), *Integrating work and family: Challenges and choices for a changing world* (pp. 91–103). Westport, CT: Quorum.
- Linacre, J. M. (2002). Optimizing rating scale category effectiveness. *Journal of Applied Measurement*, *3*(1), 85–106.
- MacDermid, S. M. (2005). Considering conflict between work and family. In E. E. Kossek, & S. Lambert (Eds.), *Work and family integration in organizations: New directions for theory and practice* (pp. 19–40). Mahwah, NJ: Lawrence Erlbaum Associates.
- McNall, L. A., Nicklin, J. M., & Masuda, A. D. (2010). A meta-analytic review of the consequences associated with work-family enrichment. *Journal of Business & Psychology*, *25*, 381–396.
- Marais, I., Styles, I., & Andrich, D. (2011). *Executive summary of the report on the psychometric properties of the Academic Perceptions of the Teaching Environment scale (APOTE) using the Rasch measurement model*. Perth, Australia: Graduate School of Education, University of Western Australia.
- Mouton, J. (2001). *How to succeed in your master's and doctoral studies: A South African guide and resource book*. Pretoria, South Africa: Van Schaik Publishers.
- Murphy, K. R. & Davidshofer, C. O. (2005). *Psychological testing: Principles and applications*. (6th ed.). Upper Saddle River, NJ: Pearson Education, Inc.
- Paoli, P. (1997). *Second European survey on working conditions 1997. European Foundation for the Improvement of Living and Working Conditions*. Dublin, Ireland: Loughlingston House.
- Parasuraman, S., & Greenhaus, J. H. (2002). Toward reducing some critical gap in work-family research. *Human Resource Management Review*, *12*, 299–312.

- Paulhus, D. L. (1991). Measurement and control of response bias. In J. P. Robinson, P. Shaver, & L. S. Wrightsman (Eds.), *Measures of Personality and Social Psychological Attitudes* (pp. 19–59). San Diego, CA: Academic Press.
- Polach, J. (2003). HRD's role in work-life integration issues: Moving the workforce to a change in mindset. *Human Resource Development International*, 6(1), 57–68.
- Powell, G. N., & Greenhaus, J. H. (2006). Is the opposite of positive negative? Untangling the complex relationship between work-family enrichment and conflict. *Career Development International*, 11, 650–659.
- Prieto, L., Alonso, J., & Lamarca, R. (2003). Classical test theory versus Rasch analysis for quality of life questionnaire reduction. *Health and Quality of Life Outcomes*, 1, 1–27
- Rashid, W. E. W., Nordin, M. S., Omar, A., & Ismail, I. (2011a). Social support, work-family enrichment and life satisfaction among married nurses in health service. *International Journal of Social Science and Humanity*, 1(2), 150–155.
- Rashid, W. E. W., Nordin, M. S., Omar, A., & Ismail, I. (2011b). Measuring self-esteem, work/family enrichment and life satisfaction: An empirical validation. *International Conference on Sociality and Economics Development*, 10, 576–581
- Rothbard, N. P. (2001). Enriching or depleting? The dynamics of engagement in work and family roles. *Administrative Science Quarterly*, 46(4), 655–684.
- Sabil, S., & Marican, S. (2011). Working hours, work-family conflict and work-family enrichment among professional women: A Malaysian case. *Social Science and Humanity*, 5, 206–209.
- Schmitt, N. (1994). Method bias: The importance of theory and measurement. *Journal of Organizational Behavior*, 15, 393–398.
- Schreuder, A. M. G., & Theron, A. L. (2001). *Careers: An organizational perspective*. Cape Town, South Africa: Juta.
- Siu, O. L., Lu, J., Brough, P., Lu, C., Bakker, A. B., Kalliath, T. (2010). Role resources and work-family enrichment: The role of work engagement. *Journal of Vocational Behavior*, 77, 470–480.
- Spector, P. E. (1994). Using self-report questionnaires in OB research: A comment on the use of a controversial method. *Journal of Organizational Behavior*, 15, 385–392.

- Stoddard, M., & Madsen, S. R. (2007). *Toward an understanding of the link between work-family enrichment and individual health*. Unpublished manuscript, Institute of Behavioural and Applied Management, Utah Valley State College, UT, United States of America.
- Struwig, F. W., & Stead, G. B. (2001). *Planning, designing and reporting research*. Cape Town, South-Africa: Pearson publishing.
- Van Steenbergen, E. F., Ellemers, N., & Mooijaart, A. (2007). How work and family can facilitate each other: Distinct types of work-family facilitation and outcomes for women and men. *Journal of Occupational Health Psychology, 12*, 279–300.
- Voydanoff, P. (2002). Linkages between the work-family interface and work, family and individual outcomes. *Journal of Family Issues, 23*, 138–164.
- Voydanoff, P. (2004). The effects of work demands and resources on work-to-family conflict and facilitation. *Journal of Marriage and Family, 66*, 398–412.
- Wagena, E., & Geurts, S. A. E. (2000). SWING. Ontwikkeling en validering van ‘de Survey Werk-Thuis Interferentie – Nijmegen’ [SWING. Development and validation of the ‘Survey Work-Home Interference – Nijmegen’]. *Gedrag en Gezondheid, 28*, 138–158.
- Wayne, J. H., Grzywacz, J. G., Carlson, D. S., & Kacmar, K. M. (2007). Work-family facilitation: A theoretical explanation and model of primary antecedents and consequences. *Human Resource Management Review, 17*, 63–76.
- Weer, C. H., Greenhaus, J. H., & Linnehan, F. (2010). Commitment to nonwork roles and job performance: Enrichment and conflict perspectives. *Journal of Vocational Behavior, 76*, 306–316.
- Wright, B. D. (1996). Comparing Rasch measurement and factor analysis. *Structural Equation Modelling, 3*, 3–24.

CHAPTER 4

RESEARCH ARTICLE 3

PSYCHOMETRIC PROPERTIES AND VALIDATION OF THE NEWLY DEVELOPED MACE WORK-FAMILY ENRICHMENT INSTRUMENT

Abstract

Orientation: Recently, a new work-family enrichment instrument has been developed by De Klerk, Nel, Hill and Koekemoer (2013). This is known as the MACE Work-Family Enrichment Instrument. The aim of this instrument is to measure the work-family enrichment experiences of employees working within South Africa. To date no information is available on the psychometric properties and validity of this instrument.

Research purpose: The two main objectives of this study were to investigate the following regarding the MACE Work-Family Enrichment Instrument: 1) the internal validity (i.e. construct validity, discriminant validity, and convergent validity), as well as internal consistency; and 2) the external validity of the instrument.

Motivation for the study: In order to measure work-family enrichment among employees in South Africa, it is important to prove the validity and reliability of the newly developed MACE work-family instrument. Therefore the need exists to investigate the psychometric properties of this newly developed instrument.

Research design, approach and method: In this study, a cross-sectional survey design was used among a combined purposive and convenience non-probability sample of employees working in various industries in South Africa ($N = 627$). Confirmatory factor analyses were done to determine the construct validity of the instrument. External validity was proven by relating the newly developed instrument to various work and home antecedents and outcomes, such as were found in the literature.

Main findings: The results provided evidence for the construct validity of the MACE Work-Family Enrichment Instrument, which measures enrichment in two directions: work-to-family and family-to-work enrichment. The reliability of the measuring instrument was confirmed and evidence of discriminant validity was provided. Furthermore, convergent validity was provided for the MACE Work-Family Enrichment Instrument, by correlating the instrument with the work-family enrichment scale developed by Carlson, Kacmar, Wayne and Grzywacz (2006). External validity was determined as the results indicated significant relationships between the

instrument and various other external variables. These variables are work engagement, job satisfaction, career satisfaction, family engagement, life satisfaction and family satisfaction.

Practical/managerial implications: This newly developed instrument can be used by researchers and managers to measure the level of work-family enrichment that employees experience.

Contribution/value added: This study provides information on the psychometric properties of the newly developed instrument and also provides evidence for the external validity of this instrument.

Keywords: psychometric properties, work-family enrichment, family-work enrichment, construct validity, discriminant validity, convergent validity, reliability, external validity.

Introduction

Work-family research has focused almost exclusively on the negative side of the work/family interface (i.e. work-family interference and conflict) and the difficulties associated with participating in multiple roles in individuals' private lives (Eby, Casper, Lockwood, Bordeaux, & Brinley, 2005). However, from the literature it is clear that researchers increasingly began to realise that the work/family interface is a much broader concept, which also includes a positive side. Work and family roles may have beneficial and reciprocal effects on one another (Frone, 2003; Greenhaus & Powell, 2006). Focusing heavily on the negative side has left a gap in researchers' understanding of the positive work/family interface (Grzywacz, 2000; Parasuraman & Greenhaus, 2002; Rothbard, 2001; Voydanoff, 2002).

However, researchers have paid increasing attention to the positive synergies between the work and family domains. This was done under a variety of different constructs, such as *positive spillover* (Hanson, Hammer, & Colton, 2006), *facilitation* (Frone, 2003; Wayne, Grzywacz, Carlson, & Kacmar, 2007), *enhancement* (Ruderman, Ohlott, Panzer, & King, 2002) and *enrichment* (Carlson *et al.*, 2006; Greenhaus & Powell, 2006). Some researchers do still argue that these constructs should be differentiated conceptually and operationally (Greenhaus & Powell, 2006; Wayne *et al.*, 2007). In the literature, constructs such as work-family positive spillover, work-family enhancement and work-family facilitation are categorised under the

heading of work-family enrichment (Carlson *et al.*, 2006; Hanson *et al.*, 2006), which appears to be the most comprehensive construct for the positive side of the work/family interface.

To advance research on and theory of the positive side of the work/family interface it is important to establish widely accepted definitions and validated measures of relevant constructs. However, it is apparent that the existing measures for the positive work/family interface were developed with a lack of consistency in conceptualisation of the construct. It was also done without rigorous scale development and validation procedures (Brockwood, Hammer, & Neal, 2003; Carlson *et al.*, 2006; Voydanoff, 2004).

In order to address these measurement issues, Carlson *et al.* (2006) was the first to develop a self-reported measure for the construct work-family enrichment that is empirically valid. They based this measure on the theoretical model of work-family enrichment (Greenhaus & Powell, 2006). This theoretical model included five categories of resources, such as skills and perspectives, psychological and physical resources, social-capital, flexibility, and material resources (Greenhaus & Powell, 2006). The instrument of Carlson *et al.* (2006), however, only measured limited resources, such as: development, affect, capital and efficiency. This has left a gap in researchers' understanding of the total resources according to the theoretical model of Greenhaus and Powell (2006) on work-family enrichment.

In an attempt to address the issue of negating the positive side of the work/family interface, De Klerk *et al.* (2013) developed a new instrument (the MACE Work-Family Enrichment Instrument). This instrument measures the enrichment between work and family in both directions (i.e. work-to-family enrichment (henceforth WFE) and family-to-work enrichment (henceforth FWE)) and is based on Greenhaus and Powell's (2006) work-family enrichment theoretical model. Furthermore, compared to the measuring instrument of Carlson *et al.* (2006), this new instrument included all the resources as mentioned in Greenhaus and Powell's (2006) work-family enrichment theoretical model. These resources entail: skills and perspectives, psychological and physiological resources, social-capital resources and flexibility (time-management). It was divided into four categories for the work-to-family enrichment direction (work-family perspectives, work-family affect, work-family time management, and work-family

socio-capital). The same applies for the family-to-work enrichment direction (e.g. family-work perspectives, family-work affect, family-work time management, and family-work socio-capital). This excludes the material resources of which the items did not show adequate results and was therefore discarded from the measuring instrument.

During the development of this new instrument, De Klerk *et al.* (2013) gave close attention to procedures of scale development as described in the literature (DeVellis, 2003). In this research, the various items were also rated on a four-point scale from one (*disagree*) to four (*strongly agree*) (De Klerk *et al.*, 2013). Furthermore, Rasch's analysis was utilised to evaluate the functioning of the items and to identify poorly functioning items. During these analyses, items were carefully evaluated and 51 items were retained.

Although this initial developmental study showed promising results, no information were provided on the instrument's psychometric properties and validity (internally and externally). According to DeVellis (1991) it is imperative to use measuring instruments that show evidence of validity and reliability and that are psychometrically sound, since it holds various implications for relationships with other variables and its validity. De Klerk *et al.* (2013) recommended that further investigation is needed on establishing the psychometric properties, validity and reliability for the newly developed measuring instrument. This makes it necessary to investigate the psychometric properties (e.g. validity and reliability) of the newly developed measuring instrument.

In addition, it is also imperative to indicate the relationships between work-family enrichment and various external variables – antecedents and outcomes (cf. e.g. Carlson & Frone, 2003; Carlson, Kacmar, & Williams, 2000; Geurts *et al.*, 2005). Some researchers have already tested the relationship of work-family enrichment with a variety of external variables. These include antecedents (e.g. core-self evaluations, family support, supervisory support) and outcomes (e.g. family satisfaction, job satisfaction, career satisfaction, affective commitment). (Cf. Baral & Bhargava, 2011; Bhargava & Baral, 2009; Crain & Hammer, 2013; Jaga & Bagraim, 2011; Jaga, Bagraim, & Williams, 2013; McNall, Nicklin, & Masuda, 2010.) Furthermore, empirical research will shed more light on the MACE Work-Family Enrichment Instrument's relationship

with other variables (i.e. work resources, home resources, engagement and satisfaction), to provide better understanding on the construct of work-family enrichment.

Research purpose and objectives

The general objective of this study was to validate the newly developed MACE Work-Family Enrichment Instrument by investigating the following aspects of this newly developed instrument: 1) the internal validity, which entails the construct validity and dimensionality, reliability, discriminant validity and convergent validity; and 2) the external validity which comprises the relationship with external variables.

Contribution to the field

This study investigates the psychometric properties of the newly developed MACE Work-Family Enrichment Instrument, more specifically to prove the validity of the instrument: *internally* (construct validity, reliability, discriminant validity and convergent validity) and *externally* (antecedents and outcomes). The present study therefore aims to provide evidence for a valid and reliable instrument that can be used to measure employees' work-family enrichment. It further attempts to demonstrate that the MACE Work-Family Enrichment Instrument is bi-directional. It focuses on the directions work-to-family enrichment and family-to-work enrichment, following four dimensions in each direction. This instrument will enable researchers to measure the work-family enrichment of employees within a South African context. Furthermore, it will enable the managers of organisations to understand how their employees experience enrichment between their work and family lives, which may lead to positive work outcomes (such as work engagement or work satisfaction).

What will follow?

An overview will be given of previous instruments that measure the positive side of the work/family interface. This will be followed by a brief literature overview on the relationships of

work-family enrichment, which entails a variety of external variables. Thereafter the hypotheses will be presented on which this article reports on.

Literature review

Evaluating the psychometric properties of instruments

In the literature various concepts and definitions are proposed to measure the positive side of the work/family interface. These include work-family enhancement, work-family positive spillover, work-family facilitation and work-family enrichment (Carlson *et al.*, 2006; Dyson-Washington, 2006; Grzywacz, 2000; Grzywacz, Almeida, & McDonald, 2002; Grzywacz & Butler, 2005; Grzywacz & Marks, 2000; Hammer, Cullen, Neal, Sinclair, & Shafiro, 2005; Hanson *et al.*, 2006; Holbrook, 2005; Kirchmeyer, 1992; Kirchmeyer, 1993; Stephens, Franks, & Atienza, 1997; Sumer & Knight, 2001; Wayne *et al.*, 2007).

According to Carlson *et al.* (2006), little clarity or consistency in the definitions and concepts has been used across measurements. Also, the majority of these measurements were developed without rigorous scale development and validation procedures (Carlson *et al.*, 2006; Brockwood *et al.*, 2003; Voydanoff, 2004). The use of such measuring instruments may thus be problematic when researchers compare results of these studies without being aware of the psychometric properties – the validity and reliability – of the instruments (DeVellis, 1991; Robinson, Shaver, & Wrightsman, 1991). Various indicators are proposed to validate measurements. Such indicators include internal validity, construct validity, discriminant validity, convergent validity, reliability and external validity. Nevertheless, the reporting and use of these indicators are inconsistent across studies that measure the positive side of the work/family interface (Carlson *et al.*, 2006; Carlson, Ferguson, Kacmar, Grzywacz, & Whitten, 2010; Carlson, Grzywacz, & Kacmar, 2010; Fisher, Bulger, & Smith, 2009; Hanson *et al.*, 2006; Holbrook, 2005; Sumer & Knight, 2001).

An aspect of the psychometric properties that are indeed reported across studies which developed positive work/family measurements, is the use of construct validity (Dyson-Washington, 2006;

Masuda, McNall, Allen, & Nicklin, 2012; Wayne, Musisca, & Fleeson, 2004). The construct validity of a measuring instrument is the degree to which it measures the theoretical construct or trait that it is supposed to measure (Foxcroft & Roodt, 2013). Factor analytical procedures may be used to determine validity, however the analyses employed during factor analytical procedures is not always consistent. Such procedures include the exploratory factor analysis (EFA) vs. confirmatory factor analysis (CFA). Some studies employed exploratory factor analyses to indicate construct validity (Carlson *et al.*, 2006; Hanson *et al.*, 2006; Holbrook, 2005; Sumer & Knight, 2001). For example, Carlson *et al.* (2006) used factor analysis with a principle component EFA applying an oblimin rotation. Multiple criteria for determining the number of factors to be retained were applied, including eigenvalues greater than 1.0 and variance explained of greater than 60%. Furthermore, only items that loaded at 0.5 or higher on the intended factor and less than 0.3 on any other factor were retained (Carlson *et al.*, 2006). Other studies used confirmatory factor analyses (Carlson *et al.*, 2006; Fisher *et al.*, 2009; Geurts *et al.*, 2005; Hanson *et al.*, 2006; Holbrook, 2005). For example Carlson *et al.* (2006) used multiple criteria to determine if their measuring instruments items perform well. First, they established which items had fully standardized factor loadings greater than 0.50. Secondly, they examined the modification indices and estimated change values for all the factor loadings to ensure that an item was not more strongly related with any factor other than the one for which it was intended. The final criterion was to examine the correlated measurement error either within factors, across factors, or both to determine if there was a pattern of significant standardized residuals (Carlson *et al.*, 2006).

In addition to construct validity, discriminant validity may also be used as an indicator to determine the psychometric properties of a measuring instrument. Discriminant validity indicates that the test of a concept is not highly correlated with other tests designed to measure theoretically different concepts. Thus discriminant validity tests whether concepts or measurements that are supposed to be unrelated, are indeed so (Coetzee & Schreuder, 2010; Foxcroft & Roodt, 2013). According to the literature, some studies on positive work/family interface tested or provided evidence for discriminant validity (cf. Carlson *et al.*, 2006; Carlson *et al.*, 2010; Fisher *et al.*, 2009). For example, Carlson *et al.* (2006) tested for discriminant validity using the chi square (χ^2) difference test. Although the use of the chi square (χ^2) is not

well known among literature focusing on positive work/family interface, this test has been recommended by previous researchers (Anderson, & Gerbing, 1988; Deery, Erwin, & Iverson, 1999).

Except for discriminant validity, another indicator that can be used to determine the validity of measuring instruments is known as convergent validity. This form of validity is known to exist if a measurement correlates highly with other variables with which it should correlate theoretically (Foxcroft & Roodt, 2013). However, convergent validity is not widely used across studies focusing on positive work/family interface. Only Carlson *et al.* (2006) and Fisher *et al.* (2009) reported that they tested for convergent validity on measurements from the positive side of the work/family interface. For example, Carlson *et al.* (2006) used two existing measures of positive spillover. The first positive spillover scale was developed by Sumer and Knight (2001), based on the work of Kirchmeyer (1992) and Kopelman, Greenhaus, and Connolly (1983). The second positive spillover scale was developed by the MIDUS, which has been used in previous research (e.g., Grzywacz & Marks, 2000; Wayne *et al.*, 2004). The correlations used to examine convergent validity were all significant and of moderate strength with correlations ranging from 0.40 to 0.65, thus indicating evidence of convergent validity.

With regard to the relationship of the positive side of the work/family interface with external variables (antecedent and outcomes), a number of studies indicated such a relationship. Some studies used product-moment correlations to indicate external validity (cf. Carlson *et al.*, 2006; Geurts *et al.*, 2005; Hanson *et al.*, 2006; Holbrook, 2005; Kirchmeyer, 1992), whereas others used multiple regressions to indicate such validity (cf. Jaga & Bagraim, 2011; Jaga *et al.*, 2013; Kirchmeyer, 1992).

Relationships between work-family enrichment and a variety of external variables

In a recent systematic review of the literature on antecedents and outcomes, Crain and Hammer (2013) identified 60 antecedents and 34 outcomes related to WFE, and 54 antecedents and 38 outcomes related to FWE (see Crain & Hammer, 2013). Over the last five years a large number of studies have shown that the work-to-family enrichment is related positively to the following

antecedents: *autonomy* (Carlson *et al.*, 2006; Karimi & Nouri, 2009; Siu *et al.*, 2010), *developmental experiences* (Carlson *et al.*, 2006), *job resources* (Hakanen, Peeters, & Perhoniemi, 2011), *job characteristics* (Baral & Bhargava, 2011; Bhargava & Baral, 2009; Taylor, Delcampo, & Blancerio, 2009), *support from co-worker* (Wadsworth & Owens, 2007), and *support from supervisor* (Baral & Bhargava, 2011; Bhargava & Baral, 2009; Cinamon & Rich, 2010; Siu *et al.*, 2010; Taylor *et al.*, 2009; Van Steenbergen, Ellemers, & Mooijaart, 2009; Wadsworth & Owens, 2007).

Furthermore, in the literature a number of antecedents is found to be related positively to FWE. These entail the following: *autonomy* (Karimi & Nouri, 2009; Siu *et al.*, 2010), *developmental experiences* (Carlson *et al.*, 2006), *support from children* (Wadsworth & Owens, 2007), *support from family members* (Baral & Bhargava, 2011; Bhargava & Baral, 2009; Karatepe & Bekteshi, 2008; Siu *et al.*, 2010), *support from spouse* (Cinamon & Rich, 2010; Lu, Siu, Spector, & Shi, 2009), and *support from family and friends* (Van Steenbergen *et al.*, 2009).

Outcomes related to WFE over the past few years, included the following: *career satisfaction* (Gordon, Whelan-Berry, & Hamilton, 2007; Jaga & Bagraim, 2011; Lu *et al.*, 2009), and *job satisfaction* (Bhargava & Baral, 2009; Boyar & Mosley, 2007; Carlson, Grzywacz, & Zivnuska, 2009; Carlson *et al.*, 2010; Carlson, Zivnuska, Kacmar, Ferguson, & Whitten, 2011; Gordon *et al.*, 2007; Jaga & Bagraim, 2011; Karatepe & Kilic, 2009; Lourel, Ford, Gamassou, Gueguen, & Hartmann, 2009; Lu *et al.*, 2009; Masuda *et al.*, 2012; McNall, Masuda, & Nicklin, 2010; Van Steenbergen *et al.*, 2007; Voydanoff, 2005). Outcomes related to FWE included *family satisfaction* (Bhargava & Baral, 2009; Boyar & Mosley, 2007; Carlson *et al.* 2009; Haar & Bardoel, 2008; Hunter, Perry, Carlson, & Smith, 2010; Jaga & Bagraim, 2011; Wayne *et al.*, 2004) and *life satisfaction* (Gareis, Barnett, Ertel, & Berkman, 2009; Hill, 2005; Lu *et al.*, 2009).

In summary, it is apparent that existing measures for the positive work/family interface were developed with a lack of consistency in conceptualisation and was done without rigorous scale development and validation procedures (Brockwood *et al.*, 2003; Carlson *et al.*, 2006; Voydanoff, 2004). According to DeVellis (1991) it is imperative to use measuring instruments that show evidence of validity and reliability and that are psychometrically sound, since the

measuring instrument holds various implications for relationships with other variables and its validity. Therefore it is necessary to investigate the psychometric properties (e.g. validity and reliability) of the newly developed measuring instrument, as well as to indicate its relationships between various external variables.

From the above mentioned literature, the following hypotheses can be posited for the present study.

Hypotheses

The following hypotheses were tested in order to obtain the objectives of the study:

- **Hypothesis 1a:** The work-to-family enrichment (WFE) component is a four-dimensional construct, consisting of work-family perspectives (WFP), work-family affect (WFA), work-family socio-capital (WFS) and work-family time management (WFT) elements.
- **Hypothesis 1b:** The family-to-work enrichment (FWE) component is a four-dimensional construct, consisting of family-work perspectives (FWP), family-work affect (FWA), family-work socio-capital (FWS) and family-work time management (FWT) elements.
- **Hypothesis 2:** Two-factors that distinguish the different directions of work-family enrichment are superior to a single factor of work-family enrichment.
- **Hypothesis 3:** The four constructs of work-to-family enrichment (WFE) and of family-to-work enrichment (FWE), are – although highly related – still empirically distinct (which implies evidence of discriminant validity).
- **Hypothesis 4:** The constructs of the MACE Work-Family Enrichment Instrument correlate strongly with the constructs of the work-family enrichment scale of Carlson *et al.* (2006); in correspondence, the constructs of the MACE Family-Work Enrichment Instrument correlate strongly with those of the family-work enrichment scale of Carlson *et al.* (2006) (which implies evidence of convergent validity).

- **Hypotheses 5:** The different constructs of both the work-to-family (WFE) and the family-to-work enrichment (FWE) instruments are related to theoretical, external variables (e.g. work resources, home resources, work engagement, job satisfaction, career satisfaction, family engagement, life satisfaction and family satisfaction).

Research design

Research approach

The research objectives are obtained by using a cross-sectional survey design. Such a design measures all the variables simultaneously (Blaikie, 2003) and is applied in studies occurring at a single point in time (Keppel, Saufley, & Tokunaga, 1992). This design is also used to assess interrelationship among variables within a population (Struwig & Stead, 2001).

Research method

Research participants

The present study aimed to prove the validity and reliability of a newly developed MACE Work-Family Enrichment Instrument. A combined purposive and convenience non-probability sample of employees ($N = 627$) from various industries in South Africa were used (e.g. Humanities, Education, Administrative). Table 1 summarises some of the characteristics of the participants.

Table 1

Characteristics of the Participants (N= 627)

Item	Category	Frequency	Percentage (%)
Gender	Male	206	32.90
	Female	420	67.00
	Missing values	1	0.20
Age	Between 18 and 23 years	41	6.50
	Between 24 and 33 years	226	36.00
	Between 34 and 43 years	149	23.80
	Between 44 and 53 years	123	19.60
	Between 54 and 63 years	74	11.80
	Between 64 and 73 years	8	1.30
	Missing values	6	1.00
Language	Western Germanic (Afrikaans and English)	513	81.80
	African	79	12.60
	Missing values	35	5.60
Industry	Humanities	136	21.70
	Education	158	25.20
	Administrative	96	15.30
	Agricultural/Practical	225	35.90
	Missing values	12	1.90
Qualification	Lower than grade 12	28	4.40
	Grade 12	188	30.00
	Post Matric diploma (Technicon or Diploma)	107	17.10
	Undergraduate university Degree	112	17.90
	Postgraduate Degree	168	26.80
	Missing values	24	3.80
Household situation	Living with parents, without children	57	9.10
	Living with parents, with children	24	3.80
	Single/divorced without children	98	15.60
	Single/divorced with children	41	6.50
	Married without children	104	16.60
	Married with children	278	44.30
	Missing values	24	3.90

Table 1 indicates that the majority of the participants were females (67%), between the age ranges of 24 to 33 years (36.0%), speaking a Western Germanic (Afrikaans and English) (81.8%) language and were married with children (44.30%). More or less an equal distribution of participants were found in all four industries such as humanities (21.70%), education (25.20%),

administrative (15.30%) and agricultural/practical industry (25.20%). Furthermore, the majority of the participants had a grade 12 qualification (30.0%), whilst 26.80% of the participants possessed a postgraduate degree.

Measuring instruments

Work resources: Three work resources were measured, namely *work autonomy*, *work support* and *work-related developmental opportunities*. *Work autonomy* and *support* were each measured with three items of the scale developed by Bakker, Demerouti and Verbreke (2004). Examples of the items were: “How often does it happen that you have a say in decisions that affect your work?”; “How often does it happen that you can count on your colleagues when you have difficulty in your work?”. *Work-related development opportunities* were measured with three items that conceptually mirrored the scale of home-related developmental opportunities. This scale was developed by Demerouti, Bakker and Voydanoff (2010). An example item was: “How often does it happen that at your work, you have the opportunity to develop your strong points?” All of the items for the three work resources were rated on a four-point Likert scale ranging from 0 (*never*) to 3 (*always*). Previous studies did indicate reliable Cronbach’s alpha coefficients that ranged between 0.68 and 0.74 for *work autonomy*, and between 0.81 and 0.85 for *work support* (Bakker *et al.*, 2004; Bakker, Demerouti, & Euwema, 2005). Koekemoer and Mostert (2010) indicated Cronbach’s alpha coefficients for *work autonomy* ($\alpha = 0.67$), *work support* ($\alpha = 0.75$) and *work developmental opportunities* ($\alpha = 0.81$). Carlson *et al.* (2006) found a high Cronbach’s alpha coefficient for *work autonomy* ($\alpha = 0.82$).

Home resources: Three home resources were measured, namely *home autonomy*, *home support* and *home-related developmental opportunities*. These home resources were developed by Demerouti *et al.* (2010) and conceptually mirror existing scales of work resources. This is because several scholars have successfully used a job-related measure as a model for constructing a symmetrical home-related measure (Frone & Rice, 1987; Frone, Russell, & Cooper, 1992; Parasuraman, Purohit, Godshalk, & Beutell, 1996). *Home autonomy* and *home support* were each measured with four items (e.g. “How often does it happen that you decide for yourself how you spend your leisure time?”; “How often does it happen that your partner or

family members show that they value you for the work you do at home?") *Home-related developmental opportunities* were measured with three items (e.g. "How often does it happen that in your free time you have the opportunity to develop yourself?"). All these home resources items were rated on a four-point Likert scale ranging from 0 (*never*) to 3 (*always*). Acceptable alpha coefficients (ranging from 0.78 to 0.83) were found by Demerouti *et al.* (2010). Koekemoer and Mostert (2010) indicated acceptable reliabilities for *home autonomy* ($\alpha = 0.64$), *home support* ($\alpha = 0.70$) and *home developmental opportunities* ($\alpha = 0.82$).

MACE Work-Family Enrichment Instrument: Altogether 51 items of the MACE Work-Family Enrichment Instrument were used. These entail the following: 31 items for the direction of work-to-family enrichment: more specifically, 11 items for the work-family perspectives (WFP) dimension (including 5 items from the skills resource and 6 items from the perspectives resource); 8 items for the dimensions of work-family affect (WFA) (which include 2 items from the self-concept resource, 3 items from the psychological resource and 3 items from the physical resource); 6 items for the work-family socio-capital (WFS) and 6 items for the dimension work-family time management (WFT). Furthermore, 20 items for the family-to-work direction were used. These entail more specifically 8 items for the dimensions of the family-work perspective (FWP) (including 2 items from the skills resource and 6 items from the perspective resource); 6 items for the family-work affect (FWA) dimension (including 3 items from the self-concept resource, 2 items from the psychological resource and 1 item from the physical resource); 3 items for the family-work socio-capital dimension (FWS) and 3 items for the family-work time-management dimension (FWT). All these items were measure with a four-point Likert scale, ranging from 1 (*disagree*) to 4 (*strongly agree*) (De Klerk *et al.*, 2013).

Work-family enrichment scale: The Work-Family enrichment scale (WFES) of Carlson *et al.* (2006) was used to measure both dimensions of the work-to-family enrichment and family-to-work enrichment and to test for convergent validity. The directions for the work-to-family enrichment were: WF Development (3 items) and WF Affect (3 items) and FW Development (4 items) and FW Affect (3 items) for the family-to-work enrichment direction. An example item for the WF Development scale was: "My involvement in work helps me to understand different viewpoints and this helps me be a better family member". An item for example from the FW

Affect scale was: “My involvement in my family makes me feel happy and this helps me be a better worker”.

Respondents indicated their levels of agreement to each statement on a five-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). In a previous study by Jaga and Bagraim (2011), reliable Cronbach’s alpha coefficients were found for the following: Work-to-family enrichment ($\alpha = 0.95$), FW Development ($\alpha = 0.93$) and FW Affect ($\alpha = 0.94$). Carlson *et al.*, (2006) found high Cronbach’s alpha coefficients for WF Development ($\alpha = 0.73$), WF Affect ($\alpha = 0.91$), FW Development ($\alpha = 0.87$) and FW Affect ($\alpha = 0.84$).

Satisfaction: Four types of satisfaction were measured namely job, career, life and family satisfaction.

Job satisfaction was measured by three items, which was developed by Hellgren, Sjöberg, and Sverke (1997). A sample item was: “I enjoy being at my job”. The response alternatives ranged from 1 (*disagree*) to 5 (*agree*). High Cronbach’s alpha reliability coefficients were reported by Hellgren *et al.*, (1997), $\alpha = 0.88$. Cronbach’s alpha reliability as reported by Clark (2001) was high ($\alpha = 0.91$). Jaga and Bagraim (2011) reported a Cronbach’s alpha reliability of 0.92 for job satisfaction.

Career satisfaction was measured by four items of the five-item scale, which was developed by Greenhaus, Parasuraman and Wormley (1990). A sample item was: “In general, I like my career”. The responses were measured on a five-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach’s alpha reliabilities for this scale were reported by Greenhaus *et al.* (1990) with $\alpha = 0.88$ and Jaga and Bagraim (2011) reported $\alpha = 0.89$.

Life satisfaction was measured by four items from the Satisfaction With Life Scale instrument (SWLS, Diener, Emmons, Larson, & Griffin, 1985). Examples of the items were, “So far I have gotten the important things I want in life.” or “In most ways my life is close to my ideal”. Items were rated on a seven-point scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Diener *et al.* (1985) found the scale to be reliable with an alpha coefficient of 0.87 and with a test-retest reliability of $\alpha = 0.82$.

Family satisfaction was measured by the four-item scale developed by Greenhaus *et al.* (1990). A sample item was, “In general, I like my family life”. The responses were measured on a five-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach’s alpha reliabilities for this scale were reported on in a study by Dyson-Washington (2006) with a $\alpha = 0.92$. Jaga and Bagraim (2011) found the scale to be reliable with an alpha coefficient of 0.89.

Engagement: Both work and family engagement was measured.

Work engagement: Eight items of the Utrecht Work Engagement Scale (UWES) was used (Schaufeli, Salanova, Gonzalez-Roma, & Bakker, 2002), consisting of two scales: *work vigour* (4 items) and *work dedication* (4 items). Examples of statements were: “At my work, I feel bursting with energy” and “At my job, I feel strong and vigorous” (Schaufeli *et al.*, 2002). The instrument was scored on a seven-point frequency rating varying from 1 (*never*) to 7 (*every day*). In a study conducted by Storm (2002) on the South African Police Service the following alpha coefficients were achieved on the dimensions: work vigour = 0.78 and work dedication = 0.89. In a study conducted by Mendes and Stander (2011) the following alpha coefficients were achieved on the dimensions: work vigour = 0.81 and work dedication = 0.90.

Family engagement: The 12-items of the UWES scale were adapted to measure the levels of family engagement with particular focus on three dimensions, namely; *family vigour* (5 items), *family dedication* (3 items) and *family absorption* (4 items). Examples of statements were; “I am enthusiastic about spending time with my family”, “When I am with my family, I forget everything else around me” and “With my family I feel energised”. The instrument was scored on a 7-point frequency rating, varying from 1 (*never*) to 7 (*every day*).

Research procedure and ethical considerations

The proposed research was presented to the Research Committee of a higher education institution. After ethical clearance was obtained from the university's Ethics Committee, a survey was compiled consisting of the relevant measuring instruments. The researcher approached various industries within the South African context. Only employees from various industries who were willing and able to participate in the study were asked to complete the test booklet. A letter requesting participation and consent from the participants was included in the survey, as well as an explanation of ethical aspects and a motivation about the importance of the research. Furthermore, participants were assured in the letter of the survey of the anonymity and confidentiality with which the information would be handled. With the help of field workers, booklets were distributed personally to the employees from the various participating organisations. Participants were given two to three weeks to complete the survey. They were also given various options for returning the survey to the researchers (e.g. personal collection or email).

Statistical analysis

The aim was to reach the objectives of the study, namely construct validity, discriminant validity, convergent validity and reliability. To achieve this aim, descriptive statistics and product-moment correlations were done in the statistical analyses. In order to prove the construct validity of the newly developed instrument, the theoretical (hypothesised) model and various alternative models were tested. This was carried out through Structural Equation Modelling (SEM) methods, as implemented in AMOS (Arbuckle, 2011). SEM is a statistical methodology that takes a confirmatory (hypothesis-testing) approach to analysing the bearing of a structural theory on a certain phenomenon (Byrne 2001). Confirmatory factor analysis (CFA) was used to examine the construct validity of the newly developed instrument with the help of AMOS structural modelling software (Arbuckle, 2011). Exploratory factor analysis (EFA) was generally regarded as the method of choice when investigating the validity of newly developed instrument.

In the present study, CFA was preferred above EFA because the instrument was initially developed by the authors and based on the specific work-family enrichment model of Greenhaus and Powell (2006). Furthermore, the CFA holds the advantage of statistically testing a hypothesised structure based on the postulated relationship between the observed measure and the underlying factors (Byrne, 2001). Previous studies in the field of positive work/family interface also used CFA to prove the construct validity for the various newly developed instruments (Carlson *et al.*, 2006; Hanson *et al.*, 2006; Holbrook, 2005).

By means of CFA, two theoretical models were tested in the present study. The first was a four-factor model for WFE (consisting of WFP, WFA, WFS and WFT). The second was a four-factor model for FWE (FWP, FWA, FWS and FWT). The two models depicting the two directions were tested. These tests were based on previous research that has indicated that the WFE direction and the FWE direction were separate, yet related constructs (Grzywacz & Marks, 2000; Kirchmeyer, 1993).

The items identified by De Klerk *et al.* (2013) were used as indicators of the latent factors. By employing alternative models (Lehmann, 2001), the two theoretical four-factor models were compared with several competing models. Similar models were tested separately for the two directions of enrichment (i.e. two alternative models for work-to-family enrichment and two alternative models for family-to-work enrichment). These competing models were similar to models used in previous scales and models based on theoretical knowledge (Carlson *et al.*, 2006; Greenhaus & Powell, 2006).

The χ^2 and several other goodness-of-fit indices were used to summarise the degree of correspondence between the implied and observed covariance matrices (Jöreskog & Sörbom, 1993). The following goodness-of-fit indices were used as adjuncts to the likelihood-ratio chi square (χ^2) statistics: a) ratio of the chi square to the degrees of freedom (χ^2/df); b) the root square of approximation (RMSEA); c) The Comparative Fit Index (CFI); d) Tucker-Lewis Index (TLI) and e) the Incremental Fit Index (IFI). The CFI, TLI and IFI were used since the likelihood ratio chi square (χ^2) is sensitive to sample size – which implies that the probability of rejecting a theoretical (hypothesised) model increases with sample size (Bentler, 1990). Acceptable fit of the

model was indicated by non-significant χ^2 values, values greater than 0.90 for CFI, TLI and IFI, also RMSEA values smaller than or equal to 0.08 (Browne & Cudeck, 1993) and $\chi^2 / df < 5.00$ (Bentler & Bonett, 1980).

To demonstrate the directionality of the work-family enrichment instrument, an exploratory factor analysis (EFA) was done utilising the SPSS program (IBM SPSS Statistics 20, 2013). The method to extract principle components were utilised and eigenvalues set on 1 and higher determined the total factors that were obtained. This analysis was done to determine whether the instrument measures two distinct directions of enrichment, namely both work-to-family and family-to-work enrichment.

In addition to the testing of the instrument's construct validity, discriminant validity was also required. The present study followed the examples of previous studies in the field of the positive side of the work/family interface (Carlson *et al.*, 2006; Carlson *et al.*, 2010; Fisher *et al.*, 2009). Therefore the discriminant validity of the instrument, or the degree to which each dimension represents a unique component of enrichment, was also tested (Coetzee & Schreuder, 2010; Foxcroft & Roodt, 2013). Discriminant validity was examined by constraining the estimated correlation parameter between two estimated constructs to 1.0, and then applying a chi-square (χ^2) difference test on the values which were obtained for the constrained and unconstrained models (Anderson & Gerbing, 1988). If the results of the chi-square (χ^2) difference test of the unconstrained model were greater than the chi-square (χ^2) difference test of the constrained models, it indicated satisfactory discriminant validity (Wixom & Todd, 2005). Furthermore, if the unconstrained model and the constrained models do not differ significantly in terms of a chi-square difference test, then discriminant validity does not exist.

Following the construct validity and discriminant validity, convergent validity was also established. The SPSS program (IBM SPSS Statistics 20, 2013) was used to assess convergent validity. Convergent validity was determined by examining the coefficients of the correlations between various dimensions of the newly developed MACE Work-Family Enrichment Instrument and WFES of Carlson *et al.* (2006). The author decided to compare the newly developed instrument to the WFES, in light of the understanding that the WFES is the only

psychometrically sound instrument to date that is based on a theoretical model, which measures enrichment of both work-to-family and family-to-work dimensions (Carlson *et al.*, 2006). Previous research indicated that correlation coefficients should be 0.35 or more to show evidence of convergent validity (Hammill, Brown, & Bryant, 1989).

After the internal validity of the newly developed instrument was proved, the reliability of this instrument was determined by using Cronbach's alpha coefficients. In addition, descriptive statistics (calculating means and standard deviations) was also used to describe the data. Finally, product-moment correlation coefficients were used to determine the relationships between the subscales of the newly developed instrument and selected external variables. These variables were: work engagement, family engagement, job satisfaction, career satisfaction, life satisfaction and family satisfaction. For statistical significance the researcher decided to set the value at a 95% confidence interval level ($p < 0.05$). Statistical significance may show results that are practically of little relevance. Therefore effect sizes were used to determine the practical significance of the relationship (Cohen, 1988; Steyn, 2002). The cut-off point for the practical significance of the correlation coefficients was set at 0.30 (medium effect) and 0.50 (large effect) (Cohen, 1988).

Pre-analyses of construct validity of the various measuring instruments

The following section reports the results for the construct validity that was undertaken for the various measuring instruments used in this study.

The construct validity of the measuring instruments was proved by using CFA in SEM AMOS programme (Arbuckle, 2011). The results supported the following models. Firstly a three-factor model for *work resources* (i.e. *work autonomy*, *work support* and *work-related development opportunities*): $\chi^2 = 122.73$ ($N = 627$), IFI = 0.95, TLI = 0.93 and CFI = 0.95; RMSEA = 0.08), as well as for *home resources* (i.e. *home autonomy*, *home support* and *home-related development opportunities*): $\chi^2 = 185.95$ ($N = 627$), IFI = 0.95, TLI = 0.93 and CFI = 0.95; RMSEA = 0.08). It also supported a two-factor model for work-to-family enrichment (WF Development and WF Affect): $\chi^2 = 32.28$ ($N = 627$), IFI = 0.99, TLI = 0.98 and CFI = 0.99; RMSEA = 0.07), as well as for

family-to-work enrichment (FW Development and FW Affect): $\chi^2 = 43.76$ ($N = 627$), IFI = 0.99, TLI = 0.97 and CFI = 0.99; RMSEA = 0.08). Then it supported a two-factor model for *work engagement* (in terms of *work vigour* and *work dedication*): $\chi^2 = 88.44$ ($N = 627$), IFI = 0.98, TLI = 0.97 and CFI = 0.98; RMSEA = 0.08). Then it supported a one-factor model for *career satisfaction*: $\chi^2 = 2.66$ ($N = 627$), IFI = 1.00, TLI = 1.00 and CFI = 1.00; RMSEA = 0.02. A three-factor model for family engagement (i.e. family vigour, family dedication, family absorption): $\chi^2 = 246.00$ ($N = 627$), IFI = 0.96, TLI = 0.95 and CFI = 0.96; RMSEA = 0.08; for *life satisfaction*: $\chi^2 = 2.91$ ($N = 627$), IFI = 1.00, TLI = 1.00 and CFI = 1.00; RMSEA = 0.03; and for *family satisfaction*: $\chi^2 = 5.52$ ($N = 627$), IFI = 1.00, TLI = 0.99 and CFI = 1.00; RMSEA = 0.05.

In the following section the results are reported according to the specific objectives and hypotheses that were formulated.

Results

In the following section results are reported in two parts, firstly for the internal validity of the instrument and secondly, by the results for the external validity.

Results for the internal validity

Construct validity: The first model that was tested for the direction WFE, was the four-factor “theoretical” model. This model hypothesised that resources from the work domain will enrich specific family dimensions, which would result in four expected enrichment dimensions (WFP, WFA, WFS and WFT). The results did show acceptable fit for this initial theoretical (hypothesised) four-factor model ($\chi^2 = 1865.02$ ($N = 627$), $\chi^2/df = 4.36$, IFI = 0.89, TLI = 0.88 and CFI = 0.89; RMSEA = 0.07). However, closer inspection of the modification indices suggested that the theoretical (hypothesised) model could be improved. The results showed that in this initial four-factor model that was tested, various items were problematic. These include the following items: phwf3, swf3 and pswf3, which loaded on two or more dimensions, as well as items sowf5, sowf6, ppwf3, pswf2, sowf4, swf1, pwf5, swf4, swf2 and phfw2, which showed reversed loadings. The researcher therefore decided to remove these problematic items.

After the removal of the problematic items, the model showed a better fit and the improved theoretical model (M1) explained the associations between the items significantly better compared to the initial model ($\Delta\chi^2 = 1500.71$ $p \leq 0,001$). The improved model (M1, See Appendix B) was the “theoretical” four-factor baseline model, which represented the proposed four-factor model and differentiated between the four expected dimensions: WFP, WFA, WFS and WFT.

Thereafter, two alternative models were compared systematically to this “theoretical” four-factor baseline model (M1). The first model that was compared to M1 was a one-factor model (M2, See Appendix B), which represents a general enrichment perspective model, proposing that all the 18 items load on the same latent dimension. The second model that was compared to M1 was a three-factor model (M3, See Appendix B), which was similar to the WFES in the work-to-family direction of Carlson *et al.* (2006). This model differentiates between 1) skills, perspectives and time management (*WF Development*); 2) socio-capital (*WF Capital*); and 3) self-concept, physical and psychological (*WF Affect*). The results of these comparisons are summarised in Table 2.

As was the case with the work-to-family direction, various models were tested for the FWE direction. The first model that was tested was the four-factor “theoretical” model for family-to-work enrichment. This model hypothesised that resources from the family domain would enrich specific work dimensions, resulting in four expected enrichment dimensions: FWP, FWA, FWS and FWT. Although the initial results for this model showed acceptable fit ($\chi^2 = 955.81$ ($N = 627$), $\chi^2 / df = 5.83$, IFI = 0.91, TLI = 0.90 and CFI = 0.91; RMSEA = 0.09), closer inspection of the modification indices suggested that this model could also be improved. The initial results showed problematic items. These were: items phfw4, sfw6 and pfw7, which showed high loadings, and pfw2, which showed lower loadings. It was decided to remove these items.

After the removal of the problematic items, the final model showed a better improved theoretical model (M1, See Appedix B) and also explained the associations between the items significantly better as compared to the initial model ($\Delta\chi^2 = 500.62$ $p \leq 0.001$). This improved model (M1) was

the final “theoretical” four-factor baseline model for family-to-work enrichment which represented the proposed four-factor model and differentiated between the four expected dimensions: FWP, FWA, FWS and FWT.

Thereafter two alternative factor models were compared systematically to this four-factor “theoretical” family-to-work enrichment model (M1). The first model which was compared to M1 in the family-to-work direction, was a one-factor model (M2, See Appendix B), which represents a general enrichment perspective, proposing that all 16 items load on the same latent dimension. The second model compared to M1 in the family-to-work direction, was a three-factor model (M3, See Appendix B), which was similar to the WFES in the family-to-work direction of Carlson *et al.* (2006). This model differentiates between 1) skills, perspectives and time management (*FW Development*); 2) socio-capital (*FW Efficiency*); and 3) self-concept, physical and psychological (*FW Affect*). The results of these comparisons are also summarised in Table 2 below.

Table 2

Goodness-of-fit statistics and chi-square difference tests of nested alternative work-to-family enrichment and family-to-work enrichment models

Nested alternative work-to-family enrichment models										
Model		χ^2	χ^2/df	IFI	TLI	CFI	RMSEA	$\Delta\chi^2$	Δdf	<i>p</i>
M1	Four-factor “theoretical model”	364.31	2.82	0.97	0.96	0.97	0.05			
M2	One-factor	1857.10	13.76	0.80	0.72	0.75	0.14	1492.79	6	***
M3	Three-factor	1318.85	9.99	0.83	0.80	0.83	0.12	954.54	3	***

Table 2 continues

		Nested alternative family-to-work enrichment models								
Model		χ^2	χ^2/df	IFI	TLI	CFI	RMSEA	$\Delta\chi^2$	Δdf	<i>p</i>
M1	Four-factor “theoretical model”	455.19	4.65	0.95	0.93	0.95	0.08			
M2	One-factor	811.68	7.81	0.89	0.88	0.89	0.10	356.49	6	***
M3	Three-factor	655.63	6.49	0.92	0.90	0.92	0.09	200.44	3	***

When inspecting of the results for the comparison of the various models for the work-to-family direction, Table 2 indicates that the fit of M2 (the one-factor model) was significantly worse, compared to the baseline model of work-to-family enrichment (M1) (M2 vs. M1: $\Delta\chi^2 = 1492.79$, $\Delta df = 6$, $p \leq 0,001$). In comparing the alternative three-factor model (M3) to the baseline model (M1), the fit of this alternative model also fell short of what was expected as a good or improved fit (M3 vs. M1: $\Delta\chi^2 = 954.54$, $\Delta df = 3$, $p \leq 0.001$). The theoretical four-factor model (M1) for work-to-family enrichment still fitted the data better, since all the values (i.e. IFI, TLI, CFI) far exceeded the conventional standard of 0.90 (Hoyle, 1995). It can also be seen from Table 2 that the theoretical four-factor model (M1) for work-to-family enrichment still provided a better fit of the data. That is because the RMSEA value was 0.05, which was smaller than the standard of 0.08 (Browne & Cudeck, 1993) and the χ^2/df was 2.82, which was less than the conventional standard of 5.00 (Bentler & Bonett, 1980).

Also indicated in Table 2, was die comparison of the family-to-work direction models. When inspecting the comparison of the baseline model for family-to-work enrichment (M1) with the first alternative one-factor model (M2), Table 2 has shown that the fit of M2 was significantly worse, compared to M1 (M2 vs. M1: $\Delta\chi^2 = 356.49$, $\Delta df = 6$, $p \leq 0.001$). Furthermore, a comparison of the three-factor model (M3) to the baseline four-factor model (M1), has shown the fit of this alternative model (M3) also to be significantly worse (as this model only had 3 factors, compared to model 1 that had four factors) (M3 vs. M1: $\Delta\chi^2 = 200.44$, $\Delta df = 3$, $p \leq 0.001$). Therefore, the theoretical hypothesised four-factor model (M1) for FWE still provided a better fit of the data, where all the values (i.e. IFI, TLI, CFI) far exceeded the conventional

standard of 0.90 (Hoyle, 1995). Table 2 also shows that the theoretical four-factor model (M1) for FWE still fitted the data better. The reason is that the RMSEA value was 0.08, which was equal to the conventional standard of 0.08 (Browne & Cudeck, 1993) and the χ^2/df was 4.65, which was less than the conventional standard of 5.00 (Bentler & Bonett, 1980).

Based on these results, Hypotheses 1a and 1b were supported, which means the WFE component is a four-dimensional construct, consisting of WFP, WFA, WFS and WFT dimensions. Furthermore the FWE component is a four-dimensional construct, consisting of FWP, FWA, FWS and FWT dimensions.

Following the investigation of construct validity, analyses were done to prove discriminant validity.

Discriminant validity: By following the example of previous researchers (Carlson *et al.*, 2006; Hanson *et al.*, 2006), discriminant validity was tested using CFAs. As indicated in Table 3, several alternative models (M2, M3, M4, M5, M6, M7) for each direction (work-to-family enrichment and family-to-work enrichment) was compared. This was done to ascertain whether the dimensions for each of the directions of enrichment differed. These constrained models, (M2, M3, M4, M5, M6, M7) was compared to the unconstrained model, which was the baseline “theoretical” four-factor models (M1 for each direction).

In each compared model, one correlation between two different dimensions was fixed equal to 1.00. For example, from the WFE instrument, the first compared model or single group baseline model was investigated. As shown in Table 3, the correlation between work-family perspective (WFP) and work-family affect (WFA), was fixed equal to 1.00, which suggests a perfect correlation. The extent to which the unconstrained model fits the data better than each of the constrained models ($\Delta\chi^2$), supports the discriminant validity for the pair of constructs in which the correlation was restricted equal to 1.00. As can be seen from Table 3, the analyses for all the various dimensions were done and all the constrained models fits the data significantly worse than the unconstrained model, thus supporting the discriminant validity of each dimension for both the WFE and FWE instruments. These results provide support for Hypotheses 3, which

briefly means the four dimensions of WFE and of FWE, are – although highly related – still empirically distinct constructs (which implies evidence of discriminant validity).

Table 3

Goodness-of-fit statistics for tests of discriminant validity for both work-to-family and family-to-work enrichment instruments

<i>Work-to-family enrichment</i>							Versus target / constrained model	
Model		χ^2	df	IFI	TLI	CFI	$\Delta\chi^2$	Δ df
M1	Unconstrained model	364.31	129	0.97	0.96	0.97		
M2	Constrained model: WFP.WFA=1.00	581.90	130	0.94	0.92	0.94	217.59	1
M3	Constrained model: WFP.WFT=1.00	609.32	130	0.93	0.92	0.93	245.01	1
M4	Constrained model: WFP.WFS=1.00	620.04	130	0.93	0.92	0.93	255.73	1
M5	Constrained model: WFA.WFT=1.00	557.04	130	0.94	0.93	0.94	192.73	1
M6	Constrained model: WFA.WFS=1.00	550.87	130	0.94	0.93	0.94	186.56	1
M7	Constrained model: WFT.WFS=1.00	578.65	130	0.94	0.93	0.94	214.34	1
<i>Family-to-work enrichment</i>								
M1	Unconstrained model	455.19	98	0.95	0.93	0.95		
M2	Constrained model: FWP.FWS=1.00	705.81	99	0.91	0.89	0.91	250.62	1
M3	Constrained model: FWP.FWA=1.00	704.37	99	0.91	0.89	0.91	249.18	1
M4	Constrained model: FWP.FWT=1.00	686.86	99	0.91	0.89	0.91	231.67	1
M5	Constrained model: FWS.FWA=1.00	703.40	99	0.91	0.89	0.91	248.21	1
M6	Constrained model: FWS.FWT=1.00	703.40	99	0.91	0.89	0.91	248.21	1
M7	Constrained model: FWT.FWA=1.00	684.36	99	0.91	0.89	0.91	229.17	1

NOTE: WFP= work-family perspective, WFA = work-family affect, WFT = work-family time management, WFS = work-family socio-capital. FWP= family-work perspectives, FWS = family-work socio-capital, FWA = family-work affect, FWT = family-work time management.

To provide evidence for the directionality of the work-family enrichment instrument, the researcher conducted an exploratory factor analysis (EFA) by using the SPSS program (IBM

SPSS Statistics 20, 2013). The method was used by which principle components are extracted, with the eigenvalues set at 1 and more, which determined the total factors to be obtained. The analysis clearly shows a two factor model. It could therefore be inferred that the four dimensions for WFE and for FWE, did measure two distinct factors (in other words, distinguished between the directions of enrichment). Therefore, Hypothesis 2 was supported by the results, which briefly means that two-factors that distinguish the different directions of work-family enrichment are superior to a single factor of work-family enrichment.

Following the the investigation of discriminant validity, convergent validity was investigated.

Convergent validity: Convergent validity was confirmed by using a matrix of the correlation coefficients between the dimensions of the WFES of Carlson *et al.* (2006), and the newly developed dimensions of the MACE Work-Family Enrichment Instrument. These correlations are reported in Table 4.

Table 4

Product-moment correlation coefficients between dimensions of the MACE Work-Family Enrichment Instrument and those of the WFES of Carlson et al. (2006).

	WF Development (0.88)	WF Affect (0.92)	FW Development (0.89)	FW Affect (0.89)
Newly developed MACE work-to-family enrichment dimensions				
Work-family perspectives (WFP)	0.59^{***}	0.48 ⁺	0.42 ⁺	0.28 ⁺
Work-family affect (WFA)	0.40 ⁺	0.58^{***}	0.23 ⁺	0.26 ⁺
Work-family socio-capital (WFS)	0.40 ⁺	0.45 ⁺	0.33 ⁺	0.25 ⁺
Work-family time management (WFT)	0.38 ⁺	0.47 ⁺	0.32 ⁺	0.28 ⁺
Newly developed MACE family-to-work enrichment dimensions				
Family-work perspectives (FWP)	0.42 ⁺	0.30 ⁺	0.54^{***}	0.48 ⁺
Family-work affect (FWA)	0.43 ⁺	0.38 ⁺	0.50 ⁺	0.52^{***}
Family-work socio-capital (FWS)	0.42 ⁺	0.36 ⁺	0.52 ^{***}	0.51 ^{***}
Family-work time management (FWT)	0.37 ⁺	0.37 ⁺	0.47 ⁺	0.42 ⁺

⁺ Statistically significant ($p < 0.05$)

^{*} Correlation is practically significant $r > 0.30$ (medium effect), ^{**} Correlation is practically significant $r > 0.50$ (large effect).

The Cronbach alpha's (α) for the work-family enrichment scale of Carlson *et al.* (2006) are indicated in the parenthesis.

As was expected, Table 4 indicates strong correlations between the dimensions of the newly developed MACE Work-Family Enrichment Instrument, and those of the WFES of Carlson *et al.* (2006). More specifically, strong statistical correlations that are practically significant were found between the dimensions of the WFP of the MACE instrument, and the WF Development dimension of Carlson *et al.* (2006) ($r = 0.59$). Such strong statistical correlations with practical significance were also found between the dimensions of WFA of the MACE instrument, and the dimension of WF Affect proposed by Carlson *et al.* (2006) ($r = 0.58$).

In terms of FWE dimensions, strong correlations were found between the new MACE instrument's dimensions, and the WFES dimensions of Carlson *et al.* (2006). More specifically, strong statistical practically significant correlations were found between the dimensions of FWP of the MACE instrument and the FW Development dimensions of Carlson *et al.* (2006) ($r = 0.54$). In addition, strong statistical correlations were also found between the dimensions of FWA of the MACE instrument and the FW Affect dimensions of Carlson *et al.* (2006) ($r = 0.52$).

Therefore, evidence for convergent validity exists, which indicates support for hypothesis 4. Briefly this implies: That the dimensions of the MACE Work-Family Enrichment Instrument correlate strongly with the dimensions of the WFES of Carlson *et al.* (2006); in correspondence, the dimensions of the FWE direction of the MACE instrument correlate strongly with those of the FWE dimensions of the WFES of Carlson *et al.* (2006) (which implies the evidence of convergent validity).

Following the confirmation of convergent validity of the study, the descriptive statistics of the study are discussed below.

Descriptive statistics: Table 5 indicates the descriptive statistics and reliability coefficients of the work and home resources, the dimensions of the newly developed MACE Work-Family Enrichment Instrument and related outcome variables.

Table 5

Descriptive statistics and Cronbach's alpha coefficients

Item	M	SD	Skewness	Kurtosis	α
Work support	2.99	0.65	-0.48	-0.21	0.74
Work-related developmental possibility	2.94	0.75	-0.34	-0.60	0.84
Work autonomy	2.93	0.66	-0.42	0.06	0.70
Home support	3.05	0.63	-0.45	-0.06	0.81
Home-related developmental possibility	2.91	0.69	-0.38	-0.26	0.82
Home autonomy	3.04	0.58	-0.33	-0.11	0.76
Work-family perspectives	2.74	0.65	-0.55	0.39	0.91
Work-family affect	2.65	0.78	-0.34	-0.52	0.84
Work-family time management	2.72	0.67	-0.52	0.17	0.90
Work-family socio-capital	2.74	0.68	-0.37	0.03	0.80
Family-work perspectives	2.99	0.61	-0.56	0.70	0.89
Family-work affect	3.08	0.61	-0.62	0.57	0.88
Family-work time management	2.95	0.67	-0.56	0.35	0.83
Family-work socio-capital	3.14	0.61	-0.63	0.73	0.78
Work vigour	5.40	1.18	-0.880	.119	0.85
Work dedication	5.44	1.50	-1.15	.612	0.93
Family vigour	5.97	1.12	-1.67	3.08	0.89
Family absorption	5.80	1.17	-1.36	2.02	0.76
Family dedication	6.14	1.17	-1.90	3.82	0.85
Job satisfaction	3.95	1.01	-1.05	0.57	0.88
Career satisfaction	3.80	1.03	-0.89	0.16	0.91
Life satisfaction	3.74	0.93	-0.78	0.23	0.82
Family satisfaction	4.20	0.85	-1.37	1.71	0.88

It is evident from Table 5 that the majority of the variables were distributed normally, with the exception of the following variables: work dedication, family vigour, family absorption, family dedication, job satisfaction and family satisfaction. Table 5 also indicates that Cronbach's alpha coefficients show acceptable levels of reliability for research purposes, since the scores obtained are > 0.70 , following the guideline of Nunnally and Bernstein (1994), and ranging from 0.70 to 0.91.

The following sub-section reports on the product-moment correlations between the variables.

Product-moment correlations: The results of the coefficients product-moment correlation between the variables are reported in Table 6 and 7. As indicated in Table 5, a number of variables were not distributed normally. These entail work dedication, family vigour, family absorption, family dedication, job satisfaction and family satisfaction. Therefore the researcher decided to apply Spearman product-moment correlations to these variables. For all the other variables Pearson product-moment correlations were used. Table 6 indicates the coefficients of the product-moment correlations for the work resources and WFE dimensions with the related work outcomes (i.e. work engagement, job satisfaction and career satisfaction). Furthermore, Table 7 indicates the coefficients for the product-moment correlations regarding home resources, FWE dimensions and outcomes (i.e. family engagement, life satisfaction and family satisfaction).

In the following sub-section the results of the external validity are reported.

Results for the external validity

The results for the external validity of the newly developed MACE instrument are depicted in the table below and will be expounded in the following section.

Table 6

Product-moment correlations for work resources, work-to-family enrichment dimensions and work engagement, job satisfaction and career satisfaction as outcomes

Item	1	2	3	4	5	6	7	8	9	10
1. Work support	-	-	-	-	-	-	-	-	-	-
2. Work-related developmental opportunities	0.45 ⁺	-	-	-	-	-	-	-	-	-
3. Work autonomy	0.44 ⁺	0.53 ^{***}	-	-	-	-	-	-	-	-
4. Work-family perspectives	0.24 ⁺	0.42⁺	0.33⁺	-	-	-	-	-	-	-
5. Work-family affect	0.30⁺	0.42⁺	0.36⁺	0.54 ^{***}	-	-	-	-	-	-
6. Work-family time management	0.22 ⁺	0.34⁺	0.32^{***}	0.60 ^{***}	0.56 ^{***}	-	-	-	-	-
7. Work-family socio-capital	0.43⁺	0.29 ⁺	0.28 ⁺	0.55 ^{***}	0.56 ^{***}	0.63 ^{***}	-	-	-	-
8. Work vigour	0.32 ⁺	0.44 ⁺	0.46 ⁺	0.30⁺	0.39⁺	0.29 ⁺	0.26 ⁺	-	-	-
9. Work dedication	0.38 ⁺	0.50 ^{***}	0.43 ⁺	0.40⁺	0.48⁺	0.30⁺	0.27 ⁺	0.79 ^{***}	-	-
10. Job satisfaction	0.33 ⁺	0.48 ⁺	0.43 ⁺	0.41⁺	0.43⁺	0.33⁺	0.29 ⁺	0.60 ^{***}	0.70 ^{***}	-
11. Career satisfaction	0.26 ⁺	0.52 ^{***}	0.43 ⁺	0.41⁺	0.42⁺	0.34⁺	0.26 ⁺	0.60 ^{***}	0.71 ^{***}	0.89 ^{***}

⁺ Statistically significant ($p < 0.01$)

* Correlation is practically significant $r > 0.30$ (medium effect); ** Correlation is practically significant $r > 0.50$ (large effect)

The correlations in **bold** is the most significant relationships in terms of the MACE work-to-family enrichment dimensions

The inferences drawn from Table 6 will be presented subsequently in terms of the various dimensions of the *work-to-family direction*. The statistically positive and practically significant relationships between each of the dimensions and different variables are pointed out below.

Work-to-family enrichment dimensions

Relationships with work resources: *Work-family perspectives* was related (with a medium effect) to work-related developmental possibility and work autonomy. *Work-family affect* showed a significant relation (with a medium effect) to work support, work-related developmental possibility and work autonomy. Furthermore, *work-family time management* was related (with a medium effect) to work-related developmental possibility and work autonomy. *Work-family socio-capital* showed form of relationship (with a medium effect) to work support.

Relationships with work engagement: *Work-family perspectives* related (with a medium effect) to work vigour and work dedication. *Work-family affect* showed such a relationship (with a medium effect) to work vigour and work dedication. The dimension *work-family time management* also was related (with a medium effect) to work dedication.

Relationships with satisfaction: *Job satisfaction* related (with a medium effect) to work-family perspectives, work-family affect and work-family time management. *Career satisfaction* showed this type of relationship (with a medium effect) to work-family perspectives, work-family affect and work-family time management.

These results provide support for hypothesis 5, which briefly means that the different dimensions of the WFE dimensions are related to theoretical external variables such as work resources, work engagement, job satisfaction and career satisfaction.

Table 7

Product-moment correlations for home characteristics, family-to-work enrichment dimensions and family engagement, life satisfaction and family satisfaction as outcomes.

Item	1	2	3	4	5	6	7	8	9	10	11
1. Home support	-	-	-	-	-	-	-	-	-	-	-
2. Home-related developmental opportunities	0.56 ⁺⁺	-	-	-	-	-	-	-	-	-	-
3. Home autonomy	0.48 ⁺	0.61 ⁺⁺⁺	-	-	-	-	-	-	-	-	-
4. Family-work perspectives	0.37⁺	0.31⁺	0.24 ⁺	-	-	-	-	-	-	-	-
5. Family-work affect	0.40⁺	0.26 ⁺	0.24 ⁺	0.75 ⁺⁺⁺	-	-	-	-	-	-	-
6. Family-work time management	0.34⁺	0.27 ⁺	0.26 ⁺	0.69 ⁺⁺⁺	0.72 ⁺⁺⁺	-	-	-	-	-	-
7. Family-work socio-capital	0.42⁺	0.25 ⁺	0.25 ⁺	0.78 ⁺⁺⁺	0.70 ⁺⁺⁺	0.70 ⁺⁺⁺	-	-	-	-	-
8. Family vigour	0.42 ⁺	0.23 ⁺	0.19 ⁺	0.25 ⁺	0.33⁺	0.25 ⁺	0.31⁺	-	-	-	-
9. Family absorption	0.33 ⁺	0.19 ⁺	0.12 ⁺	0.24 ⁺	0.29 ⁺	0.28 ⁺	0.28 ⁺	0.70 ⁺⁺⁺	-	-	-
10. Family dedication	0.41 ⁺	0.21 ⁺	0.18 ⁺	0.24 ⁺	0.34⁺	0.24 ⁺	0.33⁺	0.77 ⁺⁺⁺	0.71 ⁺⁺⁺	-	-
11. Life satisfaction	0.41 ⁺	0.28 ⁺	0.26 ⁺	0.30⁺	0.36⁺	0.33⁺	0.33⁺	0.38 ⁺	0.33 ⁺	0.35 ⁺⁺⁺	-
12. Family satisfaction	0.46 ⁺	0.30 ⁺	0.25 ⁺	0.30⁺	0.36⁺	0.29 ⁺	0.32⁺	0.57 ⁺⁺⁺	0.47 ⁺	0.59 ⁺⁺⁺	0.67 ⁺⁺⁺

⁺ Statistically significant ($p < 0.01$)

^{*} Correlation is practically significant $r > 0.30$ (medium effect); ⁺⁺ Correlation is practically significant $r > 0.50$ (large effect).

The correlations in **bold** is the most significant relationships with the MACE family-to-work enrichment dimensions

The inferences drawn from Table 7 will be presented in terms of the various dimensions of the *family-to-work direction*. The statistically positive and practically significant relationships between each of the dimensions and the different variables are pointed out below.

Family-work dimensions

Relationships with home resources: The dimension *family-work perspectives* was related in this manner (with a medium effect) to home support and home-related developmental opportunities. *Family-work affect* showed such a relationship (with a medium effect) to home support. Furthermore, *Family-work time management* was shown to be related (with a medium effect) to home support. *Family-work socio-capital* indicated such a relationship (with a medium effect) to home support.

Relationships with family engagement: *Family-work affect* was related (with a medium effect) to family vigour and family dedication. *Family-work socio-capital* showed such a relationship (with a medium effect) to family vigour and family dedication.

Relationships with satisfaction: *Life satisfaction* was shown to be related (with a medium effect) to: family-work perspectives, family-work affect, family-work time management and family-work socio-capital. *Family satisfaction* related (with a medium effect) to family-work perspectives, family-work affect and family-work socio-capital.

These results provide support for hypothesis 5, which briefly means the different FWE dimensions are related to theoretical external variables such as home resources, family engagement, life satisfaction and family satisfaction.

Discussion

There is a growing awareness that work and family roles may have beneficial and reciprocal effects. Some researchers have shown that the rewards for balancing multiple roles often outweigh the costs (Bernas & Major, 2000; Grzywacz, 2000; Parasuraman & Greenhaus, 2002;

Rothbard, 2001; Voydanoff, 2002). This refers to the positive side of the work/family interface, where experiences and participation of the individual in the one role (e.g. work role) improve the quality of life, (such as performance or affect), in the other role (e.g. family role) (Greenhaus & Powell, 2006). However, there are certain limitations in measuring the positive side of the work/family interface. It was apparent from previous studies that the existing measurements for the positive work/family interface were developed with a lack of consistency in the conceptualisation of the construct. It was also done without rigorous scale development or validation procedures (Brockwood *et al.*, 2003; Voydanoff, 2004).

Outline of the results

In an attempt to address these limitations De Klerk *et al.* (2013) recently developed a new instrument, the MACE Work-Family Enrichment Instrument, which was alluded to previously. This instrument measures the positive side of the work/family interface. Although rigorous methods were employed during the development of the scale, the psychometric properties of this instrument have not yet been established. According to DeVellis (1991) it is imperative to use measuring instruments that show evidence of validity and reliability and that are psychometrically sound. The reason is that these characteristics hold various implications for relationships of the instrument with other variables and the validity thereof. Therefore the general objective of this article was to report on the psychometric properties of this newly developed MACE instrument by investigating its internal and the external validity. More specifically the following aspects of the psychometric properties were addressed: 1) construct validity and directionality; 2) discriminant validity; 3) convergent validity; and 4) external validity. The external validity entails the instrument's relationship with theoretically relevant external variables, such as work engagement, job satisfaction, career satisfaction, family engagement, life satisfaction and family satisfaction.

With regard to the first aspect, construct validity and directionality, it was suggested that work-family enrichment (as developed and measured by De Klerk *et al.*, 2013) consists of two directions of enrichment, namely work-to-family enrichment (WFE) and family-to-work enrichment (FWE). After closer investigation of each direction of enrichment (work-family and

family-work) the authors of the MACE instrument suggested the following: The WFE direction consisted of four dimensions, in which work resources enriched family roles (e.g. perspectives, affect, socio-capital and time management – the four-factor model). In concordance, the FWE direction consisted of four dimensions, in which family resources enriched the work role (e.g. perspectives, affect, socio-capital and time management – the four-factor model). As part of the process to establish the construct validity, alternative models were tested and compared with the theoretical (hypothesised) four-factor model for each direction of enrichment by using confirmatory factor analysis (CFA). The decision to use CFA as analysis was based on previous positive work/family interface studies that also used CFA in their analyses (Carlson *et al.*, 2006; Fisher *et al.*, 2009; Geurts *et al.*, 2005; Hanson *et al.*, 2006; Holbrook, 2005).

When examining the WFE direction, the results indicated that the relationships between the items were significantly better for the four-factor theoretical (hypothesised) model, as compared to the two alternative models (i.e. one-factor model and three-factor model). When comparing the four-factor model for FWE with the two alternative models (one-factor and three-factor), the results also suggested that the theoretical (hypothesised) four-factor model explained relationships between the 16 items significantly better, as compared to the alternative models. These results support hypotheses 1(a) and 1(b) and help contribute to the existing literature covering the positive side of the work/family interface.

Compared to other measuring instruments focusing on the positive side of the work/family interface (i.e. Carlson *et al.*, 2006; Hanson *et al.*, 2006), this new four-factor model to a larger extent enables researchers to capture the complexity of the enrichment construct. The reason is that the four-factor model includes more resources and can be considered the most appropriate model. Furthermore, the results contribute to existing positive work/family interface literature, by showing that employees experience enrichment between their work and family roles. Such enrichment contributes to their quality of life in both roles (work and family). As with previous researchers (i.e. Carlson *et al.*, 2006; Greenhaus & Powell, 2006), this research also suggests that enrichment is bi-directional; for example work-family enrichment consists of two constructs (WFE and FWE), both with four sub-dimensions: perspectives, affect, socio-capital and time-management.

After establishing the construct validity and directionality of the instrument, it was important to establish the degree to which each dimension represents a unique component of enrichment. The following aspect that was tested was discriminant validity. This was done by using CFA analysis in order to support the hypothesis that the four dimensions for both directions of WFE and FWE are empirically distinct. Hypothesis 3 was supported as the results showed that the dimensions relating to both WFE and FWE, although highly correlated, are definitely distinct. For example, by examining the WFE direction, it could be seen that enrichment between work-family perspectives (WFP) is different from the enrichment of work-family affect (WFA), work-family time management (WFT) and work-family socio-capital (WFS). These dimensions can be explicated as follows:

- **WFP:** individuals participating in the work role that leads to the acquisition or refinement of skills, perspectives and values that improve the individuals' quality of life in the family role.
- **WFA:** individuals participating in their work role that leads to the acquisition or refinement of self-concept, positive affect and increased energy levels and mental sharpness that improves the individuals' quality of life within the family role.
- **WFT:** individuals' participation in the work role that provides the ability to determine the timing and pace at which role requirements are met that improve the individual's quality of life within the family role.
- **WFS:** Individuals' participation in the work role that leads to the acquisition or refinement of the maintaining of relationships and support that improves the individual's quality of life within the family role.

As can be seen from the explication above, it is clear that these four concepts of WFE mentioned above are distinct as they differ in terms of their conceptualisations. Nevertheless, these concepts are also related in the sense that all four measure the broader concept of work-family enrichment.

The newly developed MACE instrument was based on the established theoretical work-family enrichment model of Greenhaus and Powell (2006). It is also closely similar to the work-family enrichment scale (WFES) of Carlson *et al.* (2006). In light of this, the convergent validity for the newly developed instrument was determined by examining the correlations coefficients between various dimensions of this instrument and the WFES of Carlson *et al.* (2006). Hypothesis 4 of the present study was supported, seeing the results indicated strong correlations between the dimensions of the MACE instrument and the dimensions of WFES of Carlson *et al.* (2006). These strong correlations were expected since the WFES is a well established sound instrument that is based on a theoretical model (Carlson *et al.*, 2006).

More specifically, high correlations were found between the dimension of WFP from the MACE instrument and dimension of WF Development of the WFES of Carlson *et al.* (2006). This may be due to the fact that the items for the WFP dimension are conceptually similar to the items for the WF Development dimension of the WFES, seeing that both included aspects of skills and values. Although the items of the MACE instrument and WFES are conceptually similar, they differ in terms of the phrasing of their words. In addition, high correlations were also found between the WFA dimensions of the MACE instrument and WF Affect of the WFES. This may suggest that items for the WFA dimension are conceptually similar to the items of the WF Affect dimension in the WFES, seeing that both included aspects of affect (e.g. feeling happy, good mood, being cheerful). Therefore these dimensions correlated highly, but still were conceptually distinct.

For the dimensions of FWE, strong relationships were found between the MACE instrument and the WFES dimensions of Carlson *et al.* (2006). More specifically, strong relationships were found between the FWP dimensions of the MACE instrument and the FW Development dimension of the WFES. A possible explanation might be that the items for the FWP dimension are conceptually similar to those for the FW Development dimension of the WFES. The reason is that both included aspects of skills and values, and therefore correlated highly with each other, but were still conceptually distinct items. Furthermore, strong relationships were also found between the FWA dimensions of the MACE instrument and the FW Affect dimension of the

WFES. It may be recommended that the items for the FWA dimension might be conceptually similar to those for the FW Affect dimension of the WFES. That is because both sets of items included wording such as: being in a good mood, feeling happy or cheerful; hence they correlated highly, but was still conceptually distinct.

The second objective of the present study was to provide evidence for external validity. Hypothesis 5 was supported, seeing that the results indicated that the four WFE dimensions are related to various work resources and work engagement dimensions, as well as job satisfaction and career satisfaction. More specifically, work-related developmental opportunities and work autonomy were also related to WFP, WFA and WFT. This can suggest that if people's work allows them the opportunity for self-development (e.g. through training and development), it may lead to the acquisition of new skills, concepts, or attitudes, emotional benefits and skills in time management. These in turn are energy resources that promote gains in the work domain, which also benefits the functioning of the family environment. Voydanoff (2004) found that self-reported learning opportunities on the job were associated with further work-family enrichment. Furthermore, if people experience control over their own projects at work and make the decisions on their own projects, they may learn new skills, how to manage their time sufficiently and feel happy about being in control of their own work project. This condition may benefit their family as it may help these individuals to attend to their family matters if it is needed.

Work support was related to WFA and WFS. A plausible explanation may be that having supportive co-workers or supportive supervisors can help a person in dealing with issues related to family matters. Thus showing family members support, and knowing that there is support at work may generate feelings of happiness in employees. This condition also carries over and enhances their functioning in the family role. According to Frone, Yardley and Markel (1997), support gained at work from coworkers and supervisors is a resource that can enhance performance and well-being in employees' family role. These studies on WFE with its antecedents are in line with previous studies (Baral & Bhargava, 2011; Bhargava & Baral, 2009; Carlson *et al.*, 2006; Cinamon & Rich, 2010; Grzywacz & Butler, 2005; Hakanen *et al.*, 2011; Karimi & Nouri, 2009; Sui *et al.*, 2010; Taylor *et al.*, 2009; Van Steenbergen *et al.*, 2009; Wadsworth & Owens, 2007).

Regarding outcomes related to the various WFE dimensions, the results indicated that work dedication was related to WFP, WFA and WFT. A possible reason might be that resources acquired at work (e.g. skills, self-esteem, time management) may result in better performance at work (i.e. managing one's time to finish work before deadlines). Such a condition has the effect of creating more positive affect at work. This ultimately transfers to more positive affect in the family domain and more time spent in the family domain, which in turn leads to higher dedication towards one's work.

Work vigour was related to WFP and WFA. This may suggest that if one acquires more resources from work (i.e. learning new skills or values from other colleagues), it may enhance one's functioning at work. This condition may generate positive feelings in the work domain. This ultimately can transfer to more positive feelings in the family domain. In turn, such positive affect can lead to higher vigour in one's work. One feels the urge to be engaged more because of this positive feelings and the acquisition of new skills.

Job satisfaction and career satisfaction was related to WFP, WFA and WFT. The inference may be drawn that resources acquired at work (e.g. self-esteem or time-management skills) may result in better performance at work. This condition creates more positive affect at work, ultimately transferring to more positive affect in the family domain, which in turn leads to higher job satisfaction. This finding is supported by Jaga and Bagraim (2011). Furthermore, this might also suggest that persons who experience work-to-family enrichment (by gaining new skills or perspectives from work, managing one's time sufficiently) may perform better in the work domain. This condition creates more positive affect at work, ultimately transferring to more positive affect in the family domain. Such a positive affect enable employees to experience a stronger sense of career satisfaction. Thus such employees may be more satisfied with the success they had achieved in their careers, which in turn benefits their family lives. This finding is supported by Gordon *et al.* (2007) as well as by Jaga and Bagraim (2011). These results are also in accordance with previous research on outcomes of WFE (Balmforth & Gardner, 2006; Bhargava & Baral, 2009; Boyar & Mosley, 2007; Carlson *et al.*, 2006; 2009; 2010; Carlson *et al.*, 2011; Gordon *et al.*, 2007; Hanson *et al.*, 2006; Hill, 2005; Jaga & Bagraim, 2011; Karatepe

& Kilic, 2009; Lourel *et al.*, 2009; Lu *et al.*, 2009; Masuda *et al.*, 2012; McNall *et al.*, 2010; Van Steenbergen *et al.*, 2007; Voydanoff, 2005; Wayne *et al.*, 2004; Wayne, Randel, & Stevens, 2006).

Regarding the dimensions of FWE, it was indicated that all four dimensions related to various home resources and dimensions of family engagement, as well as to the variables life satisfaction and family satisfaction. More specifically, home support was related to all four dimensions of FWE. This suggests that employees experience enrichment between their family and work lives when they do enjoy sufficient support from home. Furthermore, home-related developmental opportunities were related to FWP. This indicated that if employees get the opportunities at home to develop themselves, this may promote the acquisition of skills or values from the family role that might be beneficial in the work role, thus enhancing their work environment. These findings on FWE with its antecedents are in line with previous studies (Aryee, Srinivas, & Tan, 2005; Baral & Bhargava, 2011; Bhargava & Baral, 2009; Carlson *et al.*, 2006; Cinamon & Rich, 2010; Karatepe & Bektashi, 2008; Lu *et al.*, 2009; Sui *et al.*, 2010; Van Steenbergen *et al.*, 2009; Wadsworth & Owens, 2007).

When examining the outcomes and dimensions of FWE, results indicate that life satisfaction was related to all four FWE dimensions. This may indicate that if employees perceive that the resources gained in their family life (i.e. new ideas and skills, feeling positive, managing one's time sufficiently and receiving support from family members) are beneficial to their career, they may in turn experience higher levels of satisfaction in their life and in their family role (Holbrook, 2005). The variables family vigour and family dedication were related to FWA and FWS. A plausible explanation may be that if employees receive the support they need from their family members, this could generate feelings of positive affect, which may be transferred to their workplace. Such a transfer may enhance the performance at their work, enabling them to feel more energised in their family domain. This in turn could make them more dedicated, seeing that they receive the appropriate support needed for their work domain. Furthermore, results showed that family satisfaction was related to FWP, as well as to FWA and FWS. These results are in accordance with previous research findings related to outcomes and FWE (Bhargava & Baral, 2009; Boyar & Mosley, 2007; Carlson *et al.*, 2006; Carlson *et al.*, 2009; Gareis *et al.*, 2009; Haar

& Bardoel, 2008; Hanson *et al.*, 2006; Hill, 2005; Hunter *et al.*, 2010; Jaga & Bagraim, 2011; Lu *et al.*, 2009; Wayne *et al.*, 2004).

Practical implications

The results of the present study have expanded the existing body of knowledge on the positive side of the work/family interface. This was done by providing evidence of the psychometric properties of the newly developed MACE Work-Family Enrichment Instrument. If work-family enrichment can be measured validly and reliably, it will provide managers with usable insight into the experiences of employees on work-family enrichment, and evidently focused interventions can then be identified, planned and implemented. This newly developed measuring instrument can therefore be used by researchers and managers to investigate the work-family enrichment among employees within South African companies.

Limitations and recommendations

On the one hand, the findings of this study make a valuable contribution to the positive side of the work/family interface, by disclosing the psychometric properties of the newly developed MACE Work-Family Enrichment Instrument. However, the current study is not without its limitations. Firstly, the information for this research was gathered by using self-reported questionnaires, which could result in common method variance (Oosthuizen, 2005). Secondly, the use of a cross-sectional design, could not demonstrate causal relations sufficiently. A longitudinal design or mixed-method approach could have demonstrated stronger casual relations and conclusions (Montgomery, Peeters, Schaufeli, & Den Ouden, 2003).

Notwithstanding these limitations, recommendations can be made for future studies on the use of the newly developed instrument. Organisations can utilise this instrument to measure the enrichment between the work and family lives of their employees. If organisations can understand the resources gained by employees that enrich their work/family roles, intervention plans can be developed accordingly, thereby assisting employees with resources in the

workplace. Consequently, better organisational and employee outcomes can be accomplished. Recommendations for future research include the use of the instrument across the spectrum of various occupations and organisations in South Africa to determine validity generalisation. Furthermore, future research could also explore causal relationships between various antecedents and outcomes associated with work-family enrichment and this could also include the testing of a structural model.

Conclusion

In conclusion, this study aims to contribute to the positive side of the work/family interface, by validating the newly developed MACE Work-Family Enrichment Instrument. Evidence was reported about this instrument's internal validity (i.e. construct validity and directionality, discriminant validity, and convergent validity), as well as its external validity (i.e. its relationship with theoretically relevant external variables). It showed acceptable levels of internal consistency as well. The study furthermore identified the empirical distinctiveness of various dimensions of work-family enrichment and family-work enrichment of the newly developed instrument in terms of two directions: work-to-family and family-to-work.

References

- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 3, 411-423.
- Andrich, D., & Sheridan, B. (2009). *Interpreting RUMM2030 (Part I)*. Perth, Australia: RUMM Laboratory.
- Arbuckle, J. L. (2011). *Amos Development Company*. Amos 20.0. Copyright 1983-2008. NET Framework Version 1.1
- Aryee, S., Srinivas, E. S., & Tan, H. H. (2005). Rhythms of life: Antecedents and outcomes of work-family balance in employed parents. *Journal of Applied Psychology*, 90, 132-146.
- Bakker, A. B., Demerouti, E., & Euwema, M. C. (2005). Job resources buffer the impact of job-demands on burnout. *Journal of Occupational Health Psychology*, 10(2), 170-180.
- Bakker, A. B., Demerouti, E., & Verbeke, W. (2004). Using the job demands-resources model to predict burnout and performance. *Human Resource Management*, 43, 83-104.
- Balmforth, K., & Gardner, D. (2006). Conflict and facilitation between work and family: Realizing the outcomes for organizations. *New Zealand Journal of Psychology*, 35(2), 69-76.
- Baral, R., & Bhargava, S. (2011). Examining the moderating influence of gender on the relationships between work-family antecedents and work-family enrichment. *Gender in Management: An International Journal*, 26, 122-147.
- Bhargava, S., & Baral, R. (2009). Antecedents and consequences of work-family enrichment among Indian managers. *Psychological Studies*, 54, 213-225.
- Bentler, P. M. (1990). Comparative fit indexes in structural equation models. *Psychological Bulletin*, 107, 238-246.
- Bentler, P., & Bonett, D. (1980). Significance tests and goodnesses of fit in the analysis of covariance structures. *Psychological Bulletin*, 88, 588-606.
- Bernas, K. H., & Major, D. (2000). Contributors to stress resistance: Testing a model of women's work-family conflict. *Psychology of Women Quarterly*, 24(2), 170-178.
- Blaikie, N. W. H. (2003). *Analyzing quantitative data: From description to explanation*. Thousand Oaks, CA: Sage.

- Boyar, S. L., & Mosley, D. C. (2007). The relationship between core self-evaluations and work and family satisfaction: The mediating role of work-family conflict and facilitation. *Journal of Vocational Behavior, 71*, 265-281.
- Brockwood, K. J., Hammer, L. B., & Neal, M. B. (2003, April). *An examination of positive work-family facilitation among dual-earner couples in the sandwiched generation*. Paper presented at the 18th annual conferences of the Society for Industrial and Organizational Psychology, Orlando, FL.
- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen, & J. S. Long (Eds.), *Testing structural equation models* (pp. 136-162). Newbury Park, CA: Sage.
- Byrne, B. M. (2001). *Structural equation modeling with AMOS: Basic concepts, applications and programming*. Mahwah, NJ: Erlbaum.
- Carlson, D. S., Ferguson, M., Kacmar, K. M., Grzywacz, J. G., & Whitten, D. (2011). Pay it forward: The positive crossover effects of supervisor work-family enrichment. *Journal of Management, 37*, 770-789.
- Carlson, D. S., & Frone, M. R. (2003). Relation of behavioral and psychological involvement to a new four-factor conceptualization of work-family interference. *Journal of Business and Psychology, 17*(4), 515-535.
- Carlson, D. S., Grzywacz, J. G., & Kacmar, K. M. (2010). The relationship of schedule flexibility and outcomes via the work/family interface. *Journal of Managerial Psychology, 25*, 330-355.
- Carlson, D. S., Grzywacz, J. G., & Zivnuska, S. (2009). Is work-family balance more than conflict and enrichment? *Human Relations, 62*, 1 459-1 486.
- Carlson, D. S., Kacmar, K. M., Wayne, J. H., & Grzywacz, J. G. (2006). Measuring the positive side of the work/family interface: Development and validation of a work-family enrichment scale. *Journal of Vocational Behavior, 68*, 131-164.
- Carlson, D. S., Kacmar, M. K., & Williams, L. J. (2000). Construction and validation of a multidimensional measure of work-family conflict. *Journal of Vocational Behavior, 56*, 249-276.
- Carlson, D., Zivnuska, S., Kacmar, K. M., Ferguson, M., & Whitten, D. (2011b). Work-family enrichment and job performance: A constructive replication of affective events theory. *Journal of Occupational Health Psychology, 16*, 297-312.

- Cinamon, R. G., & Rich, Y. (2010). Work family relations: Antecedents and outcomes. *Journal of Career Assessment, 18*, 59-70.
- Clark, S. C. (2001). Work-cultures and work/family balance. *Journal of Vocational Behavior, 58*, 348-365.
- Coetsee, M., & Schreuder, D. (2010). *Personnel psychology: An applied perspective*. Cape Town, South Africa: Oxford University Press.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Orlando, CA: Academic Press.
- Crain, T. L. & Hammer, L. B. (2013). Work-family enrichment: A systematic review of antecedents, outcomes and mechanisms. In A. B. Bakker (Ed.), *Advances in Positive Organizational Psychology* (pp. 303-328). Bingley, UK: Emerald.
- De Klerk, M., Nel, J. A., Hill, C., & Koekemoer, E. (2013). The development of the MACE work-family enrichment instrument. *South African Journal of Industrial Psychology, 39*(2), 1-16.
- Demerouti, E., Bakker, A. B., & Voydanoff, P. (2010). Does home life interfere with or facilitate job performance? *European Journal of Work and Organisational Psychology, 19*(2), 128-149.
- DeVellis, R. F. (1991). *Scale development, theory and application*. Thousand Oaks, CA: Sage.
- DeVellis, R. F. (2003). *Scale development, theory and application* (2nd ed.). Thousand Oaks, CA: Sage.
- Diener, E. D., Emmons, R. A., Larson, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*, 71-75.
- Dyson-Washington, F. (2006). *The relationship between optimism and work-family enrichment and their influence on psychological well-being* (Unpublished doctoral dissertation). Drexel University, Philadelphia, PA, United States of America.
- Eby, L. T., Casper, W. J., Lockwood, A., Bordeaux, C., & Brinley, A. (2005). Work and family research in IO/OB: Content analysis and review of the literature (1980-2002). *Journal of Vocational Behavior, 66*, 124-197.
- Fisher, G. G., Bulger, C. A., & Smith, C. S. (2009). Beyond work and family: A measure of work/nonwork interference and enhancement. *Journal of Occupational Health Psychology, 14*(4), 441-456.

- Foxcroft, C., & Roodt, G. (2013). *An introduction to psychological assessment in the South African context*. Cape Town, South Africa: Oxford University Press.
- Frone, M. R. (2003). Work-family balance. In J. C. Quick, & L. E. Tetrick (Eds.), *Handbook of occupational health psychology* (pp. 143-162). Washington, DC: American Psychological Association.
- Frone, M. R., & Rice, R. W. (1987). Work-family conflict: The effect of job and family involvement. *Journal of Occupational Behavior, 11*, 79-96.
- Frone, M. R., Russell, M., & Cooper, M. L. (1992). Antecedents and outcomes of work-family conflict: Testing a model of the work-family interface. *Journal of Applied Psychology, 77*, 65-78.
- Frone, M. R., Yardley, J. K., & Markel, K. S. (1997). Developing and testing an integrative model of the work-to-family interface. *Journal of Vocational Behavior, 50*(2), 145-167.
- Gareis, K. C., Barnett, R. C., Ertel, K. A., & Berkman, L. F. (2009). Work-family enrichment and conflict: Additive effects, buffering, or balance? *Journal of Marriage and Family, 71*, 696-707.
- Geurts, S. A. E., Taris, T. W., Kompier, M. A. J., Dijkers, J. S. E., Van Hooff, M. L. M., & Kinnunen, U. M. (2005). Work-home interaction from a work psychological perspective: Development and validation of a new questionnaire, the SWING. *Work & Stress, 19*(4), 319-339.
- Gordon, J. R., Whelan-Berry, K. S., & Hamilton, E. H. (2007). The relationship among work-family conflict and enhancement, organizational work-family culture, and work outcomes for older working women. *Journal of Occupational Health Psychology, 12*, 350-364.
- Greenhaus, J. H., Parasuraman, S., & Wormley, W. M. (1990). Effects of race on organizational experiences, job performance evaluations, and career outcomes. *Academy of Management Journal, 33*, 64-86.
- Greenhaus, J. H., & Powell, G. N. (2006). When work and families are allies: A theory of work-family enrichment. *Academy of Management Review, 31* (1), 72-92.
- Grzywacz, J. G. (2000). Work-family spillover and health during midlife: Is managing conflict everything? *American Journal of Health Promotion, 14*(4), 236-243.
- Grzywacz, J. G., Almeida, D. M., & McDonald, D. A. (2002). Work-family spillover and daily reports of work and family stress in the adult labor-force. *Family Relations, 51*, 28-36.

- Grzywacz, J. G., & Butler, A. B. (2005). The impact of job characteristics on work-to-family facilitation: Testing a theory and distinguishing a construct. *Journal of Occupational Health Psychology, 10*, 97-109.
- Grzywacz, J. G., & Marks, N. F. (2000). Re-conceptualizing the work/family interface: An ecological perspective on the correlates of positive and negative spillover between work and family. *Journal of Occupational Health Psychology, 5*, 111-126.
- Haar, J. M., & Bardoel, E. A. (2008). Positive spillover from the work/family interface: A study of Australian employees. *Asia Pacific Journal of Human Resource, 46*, 275-287.
- Hakanen, J. J., Peeters, M. C. W., & Perhoniemi, R. (2011). Enrichment processes and gain spirals at work and at home: A 3-year cross-lagged panel study. *Journal of Occupational and Organizational Psychology, 84*, 8-30.
- Hammer, L. B., Cullen, J. C., Neal, M. B., Sinclair, R. R., & Shafiro, M. V. (2005). The longitudinal effects of work-family conflict and positive spillover on depressed symptoms among dual-earner couples. *Journal of Occupational Health Psychology, 10*(2), 138-154.
- Hammill, D. D., Brown, L., & Bryant, R. R. (1989). *A consumers' guide to test in print*. Austin, TX: PRO-ED.
- Hanson, G. C., Hammer, L. B., & Colton, C. L. (2006). Development and validation of a multidimensional scale of perceived work-family positive spillover. *Journal of Occupational Health Psychology, 11*(3), 249-265.
- Hellgren, J., Sjöberg, A., & Sverke, M. (1997). Intention to quit: Effects of job satisfaction and job perceptions. In F. Avallone, J. Arnold, & K. de Witte (Eds.), *Feelings work in Europe* (pp. 415-423). Milano, Italy: Guerini.
- Hill, E. J. (2005). Work-family facilitation and conflict, working fathers and mothers, work-family stressors and support. *Journal of Family Issues, 26*(6), 793-819.
- Holbrook, S. K. (2005). *Development and initial validation of the work-family facilitation scale* (Unpublished doctoral thesis). University of South Florida, Florida, United States of America.
- Hoyle, R. H. (1995). The structural equation modeling approach: Basic concepts and fundamental issues. In R. H. Hoyle (Ed.), *Structural equation modeling: Concepts, issues, and applications* (pp. 1-15). Thousand Oaks, CA: Sage.
- Hunter, E. M., Perry, S. J., Carlson, D. S., & Smith, S. A. (2010). Linking team resources to work-family enrichment and satisfaction. *Journal of Vocational Behavior, 77*, 304-312.

- Jaga, A., & Bagraim, J. (2011). The relationship between work-family enrichment and work-family satisfaction outcomes. *South African Journal of Psychology*, 41(1), 52-62.
- Jaga, A., Bagraim, J., & Williams, Z. (2013). Work-family enrichment and psychological health. *SA Journal of Industrial Psychology*, 39(2), 1-10.
- Jöreskog, K. G., & Sörbom, D. (1993). *LISREL 8: User's reference guide*. Chicago, IL: Scientific Software International.
- Karatepe, O. M., & Bekteshi, L. (2008). Antecedents and outcomes of work-family facilitation and family-work facilitation among frontline hotel employees. *International Journal of Hospitality Management*, 27, 517-528.
- Karatepe, O. M., & Kilic, H. (2009). The effects of two directions of conflict and facilitation on frontline employees' job outcomes. *The Service Industries Journal*, 29, 977-993.
- Karimi, L., & Nouri, A. (2009). Do work demands and resources predict work-to-family conflict and facilitation? A study of Iranian male employees. *Journal of Family and Economic Issues*, 30, 193-202
- Keppel, G., Saufley, W. H., & Tokunaga, H. (1992). *Introduction to design and analysis: A student's handbook*. (2nd ed.). New York, NY: W. H. Freeman.
- Kirchmeyer, C. (1992). Perceptions of nonwork-to-work spillover: Challenging the common view of conflict-ridden relationships. *Basic and Applied Social Psychology*, 13, 231-249.
- Kirchmeyer, C. (1993). Nonwork-to-work spillover: A more balanced view of the experiences and coping of professional women and men. *Sex Roles*, 28, 531-552.
- Koekemoer, E., & Mostert, K. (2010). Work-nonwork interference: Preliminary results on the psychometric properties of a new instrument. *SA Journal of Industrial Psychology*, 36(1), 1-13. doi: 10.4102/sajip.v36i1.908.
- Kopelman, R. E., Greenhaus, J. H., & Connolly (1983). A model of work, family, and interrole conflict: A construct validation study. *Organizational Behavior and Human Performance*, 32, 198-215.
- Lehmann, D. (2001). Structural Equations Modeling. *Journal of Consumer Psychology*, 10, 90-92.
- Lourel, M., Ford, M. T., Gamassou, C. E., Gueguen, N., & Hartmann, A. (2009). Negative and positive spillover between work and home. *Journal of Managerial Psychology*, 24, 438-449.

- Lu, J. F., Siu, O. L., Spector, P. E., & Shi, K. (2009). Antecedents and outcomes of a fourfold taxonomy of work-family balance in Chinese employed parents. *Journal of Occupational Health Psychology, 14*, 182-192.
- Masuda, A. D., McNall, L. A., Allen, T. D., & Nicklin, J. M. (2012). Examining the constructs of work-to-family enrichment and positive spillover. *Journal of Vocational Behavior, 80*, 197-210.
- McNall, L. A., Masuda, A. A., & Nicklin, J. M. (2010). Flexible work arrangements, job satisfaction, and turnover intentions: The mediating role of work-to-family enrichment. *Journal of Psychology, 144*, 61-81.
- McNall, L. A., Nicklin, J. M., & Masuda, A. A. (2010). A Meta-analytical review of the consequences associated with work-family enrichment. *Journal of Business and Psychology, 25*, 381-396.
- Mendes, F., & Stander, M. W. (2011). Positive organisation: The role of leader behaviour in work engagement and retention. *South African Journal of Industrial Psychology, 37*(1), 1-13. doi:10.4102/sajip.v37i1.900
- Montgomery, A. J., Peeters, M. C. W., Schaufeli, W. B., & Den Ouden, M. (2003). Work-home interference among newspaper managers: Its relationship with burnout and engagement. *Anxiety, Stress & Coping, 16*, 195-211.
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York, NY: McGraw-Hill.
- Oosthuizen, B. (2005). *Job characteristics, coping and work-home interaction in a nursing environment* (Unpublished master's dissertation). North-West University, Potchefstroom, South Africa.
- Parasuraman, S., & Greenhaus, J. H. (2002). Toward reducing some critical gap in work-family research. *Human Resource Management Review, 12*, 299-312.
- Parasuraman, S., Purohit, Y. S., Godshalk, V. M., & Beutell, N. J. (1996). Work and family variables, entrepreneurial career success, and psychological well-being. *Journal of Vocational Behavior, 48*, 275-300.
- Robinson, J. P., Shaver, P. R., & Wrightsman, L. S. (1991). Criteria for scale selection and evaluation. In J. P. Robinson, P. R., Shaver, & L. S. Wrightsman (Eds), *Measures of personality and social psychological attitudes* (pp. 1-16). New York, NY: Academic Press.

- Rothbard, N. P. (2001). Enriching or depleting? The dynamics of engaging in work and family roles. *Administrative Science Quarterly*, 46, 655-684.
- Ruderman, M. N., Ohlott, P. J., Panzer, K., & King, S. N. (2002). Benefits of multiple roles for managerial women. *Academy of Management Journal*, 45, 369-386.
- Schaufeli, W. B., Salanova, M., Gonzalez-Roma, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A confirmative analytic approach. *Journal of Happiness Studies*, 3, 71-92.
- Siu, O., Lu, J., Brough, P., Lu, C., Bakker, A. B., Kalliath, T., & Shi, K. (2010). Role resources and work-family enrichment: The role of work engagement. *Journal of Vocational Behavior*, 77, 470-480.
- Stephens, M. A., Franks, M. M., & Atienza, A. A. (1997). Where two roles intersect: Spillover between parent care and employment. *Psychology and Aging*, 12, 30-37.
- Steyn, H. S. (2002). Practically significant relationships between two variables. *South African Journal of Industrial Psychology*, 28(3), 10-15.
- Storm, K. (2002). *Burnout and work engagement in the South African Police Service* (Unpublished doctoral thesis). Potchefstroom University for CHE, Potchefstroom, South Africa.
- Struwig, F. W., & Stead, G. B. (2001). *Planning, designing and reporting research*. Cape Town, South Africa: Pearson publishing.
- Sumer, H. C., & Knight, P. A. (2001). How do people with different attachment styles balance work and family? A personality perspective on work-family linkage. *Journal of Applied Psychology*, 86, 653-663.
- Taylor, B. L., Delcampo, R. G., & Blancero, D. M. (2009). Work-family conflict/facilitation and the role of workplace supports for U.S. Hispanic professionals. *Journal of Organizational Behavior*, 30, 643-664.
- Voydanoff, P. (2002). Linkages between the work/family interface and work, family and individual outcomes. *Journal of Family Issues*, 23, 138-164.
- Voydanoff, P. (2004). The effects of work demands and resources on work-to-family conflict and facilitation. *Journal of Marriage and Family*, 66, 398-412.

- Voyandoff, P. (2005). The effects of community demands, resources, and strategies on the nature and consequences of the work/family interface: An agenda for future research. *Family Relations*, *54*, 583-595.
- Van Steenbergen, E. F., Ellemers, N., & Mooijaart, A. (2009). Combining work and family: How family supportive work environments and work supportive home environments can reduce work-family conflict and enhance facilitation. In D. R. Crane, & E. J. Hill (Eds.), *Handbook of families & work: Interdisciplinary perspectives*. (pp. 279-300). New York, NY: University Press of America.
- Wadsworth, L. L., & Owens, B. P. (2007). The effects of social support on work-family enhancement and work-family conflict in the public sector. *Public Administration Review*, *67*, 75-87.
- Wayne, J. H., Grzywacz, J. G., Carlson, D. S., & Kacmar, K. M. (2007). Work-family facilitation: A theoretical explanation and model of primary antecedents and consequences. *Human Resource Management Review*, *17*, 63-76.
- Wayne, J. H., Musisca, N., & Fleeson, W. (2004). Considering the role of personality in the work-family experience: Relationships of the big five to work-family conflict and facilitation. *Journal of Vocational Behavior*, *64*, 108-130.
- Wayne, J. H., Randel, A. E., & Stevens, J. (2006). The role of identity and work-family support in work-family enrichment and its work-related consequences. *Journal of Vocational Behavior*, *69*, 445-461.
- Wixom, B. H., & Todd, P. A. (2005). A theoretical integration of user satisfaction and technology acceptance. *Information Systems Research*, *16*, (1), 85-102.

CHAPTER 5

RESEARCH ARTICLE 4

ASSESSING WORK AND HOME RESOURCES, WORK-FAMILY ENRICHMENT, ENGAGEMENT AND SATISFACTION AMONG EMPLOYEES IN THE SOUTH AFRICAN CONTEXT

Abstract

Orientation: According to the literature certain antecedents and outcomes are associated with work-family enrichment. However, relatively little research is done on the relationship between these variables within the South African context

Research purpose: The aim of this study was to investigate the relationship between antecedents and outcomes related to the newly developed dimensions of the MACE Work-Family Enrichment Instrument. Furthermore, the aim was to investigate which antecedents and work-family enrichment predict outcomes.

Motivation for the study: From recent literature, it is clear that work and family roles have reciprocal beneficial effects. By investigating the resources gained, the antecedents and outcomes that are associated with these roles may contribute to research and also assist organisations.

Research design, approach and method: A cross-sectional survey design was used among employees in various industries in South Africa ($N = 627$). The following statistics were used to analyse the data: descriptive statistics, Cronbach's alpha coefficients, product-moment correlations and multiple regressions.

Main findings: Results indicated that dimensions of work-to-family enrichment and family-to-work enrichment are seen as significant predictors of various outcomes. More specifically, the results indicated that work-family perspectives are seen as a significant predictor of high levels of job satisfaction, career satisfaction, and work dedication. Work-family affect was found to be significant predictors of high levels of job satisfaction, career satisfaction, work dedication and work vigour. Furthermore, family-work affect was seen as a significant predictor of high levels of both family satisfaction and life satisfaction and of all three family engagement dimensions (e.g. family vigour, family dedication and family absorption). Family-work perspectives predicted a significant high level of family vigour.

Practical/managerial implications: The results give researchers and managers insight into the specific antecedents (e.g. work resources) and outcomes (e.g. job satisfaction) that play a role in work-family enrichment, therefore interventions can be developed to address these issues.

Contribution/value-add: This study provides information on the relationship between antecedents and outcomes associated with work-family enrichment. It further provides a more comprehensive understanding of the positive side of the work/family interface.

Keywords: work resources, home resources, work-family enrichment dimensions, family-work enrichment dimensions, work engagement, job satisfaction, career satisfaction, family engagement, life satisfaction, family satisfaction.

Introduction

Work and family imply two significant domains in the lives of employees (Rashid, Nordin, Omar, & Ismail, 2011a). The interaction between these two domains has become increasingly difficult due to several changes within present society. The number of women, dual-earner couples, single parent households and fathers who are actively involved in parenting (Paoli, 1997; Polach, 2003; Schreuder & Theron, 2001) have increased in the South African workforce. Therefore it is clear that many employees are faced with the challenges of managing their work and family roles simultaneously (Stevens, Minnote, Mannon, & Kiger, 2007). As a result, organisations face the challenge of executing practices that allow their employees to perform at work, as well as to function meaningfully in their family lives. A good work-family interaction is of paramount importance for the economic viability of institutions and for the welfare of families (Barnett, 1998).

Organisations should devote particular consideration to the relationships between the work and family domains and how these two domains impact on other elements, such as quality of life or job satisfaction (Rashid *et al.*, 2011a). Organisations continually seek experienced employees who are meticulous in their work. Therefore, it is in the best interest of organisations to follow practices that allow their employees to perform at work and also function meaningfully in their home environment (Rashid *et al.*, 2011a). It is essential to understand the benefits of experiences

and resources gained in the individuals' work and family roles. Such understanding will allow individuals to become aware of resources that are gained and will help them to apply those resources within the work and family domains. This, in turn, will lead to better functioning in both domains and greater satisfaction with life in general. Critically, it can be argued that satisfaction in life will increase job satisfaction, which could lead to better and improved individual and organisational performances (Rashid, Nordin, Omar, & Ismail, 2011b).

Researchers have sought a better understanding of the relationship between both directions of work-to-family enrichment (henceforth WFE) and a variety of important antecedents. Some of the more recent studies indicated WFE to be related positively to antecedents such as *autonomy* (Carlson, Kacmar, Wayne, & Grzywacz, 2006; Grzywacz & Butler, 2005; Karimi & Nouri, 2009; Siu *et al.*, 2010), *developmental experiences* (Carlson *et al.*, 2006), job resources (Hakanen, Peeters, & Perhoniemi, 2011), *job characteristics* (Baral & Bhargava, 2011; Bhargava & Baral, 2009; Taylor, Delcampo, & Blancero, 2009), *support from co-workers* (Wadsworth & Owens, 2007), and *support from the supervisor* (Baral & Bhargava, 2011; Bhargava & Baral, 2009; Cinamon & Rich, 2010; Siu *et al.*, 2010; Taylor *et al.*, 2009; Van Steenbergen, Ellemers, & Mooijaart, 2009; Wadsworth & Owens, 2007).

In addition, a number of antecedents in the literature are found to be positively related to family-to-work enrichment (henceforth FWE). These antecedents include the following: *autonomy* (Carlson *et al.*, 2006; Grzywacz & Butler, 2005; Karimi & Nouri, 2009; Siu *et al.*, 2010), *developmental experiences* (Carlson *et al.*, 2006), *support from children* (Wadsworth & Owens, 2007), support from family (Aryee, Srinivas, & Tan, 2005; Baral & Bhargava, 2011; Bhargava & Baral, 2009; Karatepe & Bektashi, 2008; Siu *et al.*, 2010), *support from spouse* (Cinamon & Rich, 2010; Lu, Siu, Spector, & Shi, 2009), and *support from family and friends* (Van Steenbergen *et al.*, 2009).

Studies show that enrichment between the work and family domains holds positive outcomes for organisations and those they employ. WFE is thus associated with work-related outcomes. These outcomes include both the aspects of *career satisfaction* (Gordon, Whelan-Berry, & Hamilton, 2007; Jaga & Bagraim, 2011; Lu *et al.*, 2009) and *work satisfaction* (Balmforth & Gardner,

2006; Bhargava & Baral, 2009; Boyar & Mosley, 2007; Carlson *et al.*, 2006; Carlson, Grzywacz, & Zivnuska, 2009; Carlson, Grzywacz, & Kacmar, 2010; Carlson, Zivnuska, Kacmar, Ferguson, & Whitten, 2011; Gordon *et al.*, 2007; Hanson, Hammer, & Colton, 2006; Hill, 2005; Jaga & Bagraim, 2011; Karatepe & Kilic, 2009; Lourel, Ford, Gamassou, Gueguen, & Hartmann, 2009; Lu *et al.*, 2009; Masuda, McNall, Allen, & Nicklin, 2012; McNall, Masuda, & Nicklin, 2010; Van Steenbergen *et al.*, 2007, Voydanoff, 2005; Wayne, Musisca, & Fleeson, 2004; Wayne, Randel, & Stevens, 2006).

Correspondingly, FWE is associated with family-related outcomes such as both *family satisfaction* (Bhargava & Baral, 2009; Boyar & Mosley, 2007; Carlson *et al.*, 2006; Carlson *et al.*, 2009; Haar & Bardoel, 2008; Hanson *et al.*, 2006; Hill, 2005; Hunter, Perry, Carlson, & Smith, 2010; Jaga & Bagraim, 2011; Wayne *et al.*, 2004) and *life satisfaction* (Gareis, Barnett, Ertel, & Berkman, 2009; Hill, 2005; Lu *et al.*, 2009).

Limited research had been undertaken in South Africa on the relationship between antecedents and outcomes related to WFE (e.g. Jaga & Bagraim, 2011). One such study is that of Jaga and Bagraim (2011), whose findings reveal that career satisfaction and job satisfaction were significant outcomes of WFE and family satisfaction was a significant outcome for FWE. Although the relationship between WFE, FWE and outcomes has been research within the South African context (e.g. Jaga & Bagraim, 2011), more research is needed on the relationship of this enrichment between work and family, with the following antecedents: work resources (i.e. work support, work-related developmental opportunities, work autonomy) and home resources (i.e. home support, home-related developmental opportunities and home autonomy), as well outcomes such as work engagement (i.e. work vigour and work dedication), family engagement (i.e. family vigour, family absorption and family dedication), job satisfaction, career satisfaction, life satisfaction and family satisfaction. The reason is that such a study will provide a more comprehensive understanding of the positive side of the work/family interface in the South African context.

Research purpose and objectives

The general objective of this study was to determine the relationship between work and home resources, work-family enrichment, engagement and satisfaction among employees in the South African context.

Contribution to the field

Given the aforementioned problem statement, there is a clear need to expand current literature on the positive side of the work/family interface. Thus it seems relevant to investigate the relationship between antecedents and outcomes related to work-family enrichment. The present study will provide a more comprehensive understanding of the positive side of the work/family interface.

What will follow?

Against this background, the aim is to explore the relationship between antecedents and outcomes related to WFE and FWE. This is done by investigating the concept and discussing the antecedents as well as the outcomes related to WFE and FWE.

Literature review

Work-family enrichment

Greenhaus and Powell (2006) provided a comprehensive theoretical framework for work-family enrichment, based on earlier work of Sieber (1974) and Marks (1977) who originated with the idea that engaging in work and family roles can be mutually beneficial. The fundamental thinking behind the work-family enrichment model is that work and family each provide individuals with resources (i.e. skills and perspectives, psychological and physical, social-capital, flexibility, material means) in the one domain that may help the individual to improve his/her quality of performance in the other domain, or may influence the person's psychological state of affect (Barnett & Hyde, 2001; Friedman & Greenhaus, 2000; Greenhaus & Powell, 2006).

These resources enable improved performance in the other role, either directly (i.e. instrumental path) or indirectly (i.e. affective path). Furthermore, work-family enrichment can be described as bi-directional in nature (i.e. from the work-to-family direction (WFE) and from family-to-work direction (FWE)) (Balmforth & Gardner, 2005; Carlson *et al.*, 2006; Frone, 2003; Grzywacz & Butler, 2005; Grzywacz & Marks, 2000; Greenhaus & Powell, 2006; Hanson *et al.*, 2006; Wayne, Grzywacz, Carlson, & Kacmar, 2007). By incorporating both directions of enrichment, researchers can understand the work-family enrichment component more comprehensively (Carlson *et al.*, 2006).

Two scales that were developed for work-family enrichment was the scale of Carlson *et al.* (2006) and the MACE Work-Family Enrichment Instrument developed by De Klerk *et al.* (2013). Both these measuring instruments were based on Greenhaus and Powell's (2006) conceptualisation of enrichment. Carlson *et al.* (2006) measured three dimensions from work-to-family, namely development, affect and capital; also three dimensions from family-to-work, namely development, affect and efficiency. However, the instrument of Carlson *et al.* (2006) did not include all the resources as mentioned by Greenhaus and Powell (2006). Therefore the total resources gained could not be captured fully. However, De Klerk *et al.* (2013) addressed this issue by developing a measuring instrument that captures more resources, as described by Greenhaus and Powell's (2006) model. The measuring instrument of De Klerk *et al.* (2013) consists of four resources in each direction (i.e. work-to-family enrichment and family-to-work enrichment), namely perspectives, affect, time management and socio-capital resources.

Antecedents and outcomes associated with the concept work-family enrichment

A small number of studies incorporating both directions suggest that the antecedents and outcomes of enrichment have been generally thought to be domain specific (McNall, Nicklin, & Masuda, 2010). As such, work antecedents should be the primary predictors of WFE; correspondingly, predictors of FWE are specific to the family domain (Aryee *et al.*, 2005; Greenhaus & Powell, 2006; Grzywacz & Marks, 2000). Outcomes of enrichment should be related to the receiving domain (Grzywacz & Marks, 2000; Haar & Bardoel, 2008). However,

Voydanoff (2005) and others argue that employees may attribute their enhanced performance in the receiving role to the resources generated in the original role (Wayne *et al.*, 2004). Consequently, this increases satisfaction and bring about other outcomes (e.g. engagement) that are associated with the original role.

The relationship between work resources, home resources and work-family enrichment

The Job Demands – Resources (JD-R) model (Demerouti, Bakker, Nachreiner, & Schaufelli, 2001) is a theoretical framework used to investigate the relationship between the work-family interface, work characteristics and home characteristics. A central proposition of the JD-R model is that, although every occupation may have its own specific work characteristics, it is still possible to model these characteristics in categories of work demands and work resources. With the focus on the relationship between work resources and WFE, it can be seen that work resources refer to those physical, psychological, social, or organisational aspects of the job. These aspects are found to (1) be functional in achieving work goals; (2) reduce job demands and the associated physiological and psychological costs; and (3) stimulate personal growth and development (Demerouti *et al.*, 2001). Resources may be located in the task itself (e.g. performance feedback, skill variety, task significance, task identity, autonomy; cf. Hackman & Oldham, 1976). The resources can also be located in the context of the task, for instance organisational resources (e.g. career opportunities, job security, salary) and social resources (e.g. supervisor and co-worker support, team climate).

Furthermore, work resources may play a dual motivational role: intrinsic because these resources foster employees' growth, learning, and development, or extrinsic because they are instrumental in achieving work goals (Demerouti *et al.*, 2001). Research indicating a relationship between WFE and work resources included the following antecedents: autonomy (Carlson *et al.*, 2006; Grzywacz & Butler, 2005; Karimi & Nouri, 2009; Siu *et al.*, 2010), developmental experiences (Carlson *et al.*, 2006), work resources (Hakanen *et al.*, 2011), support from co-workers (Wadsworth & Owens, 2007), and support from the supervisor (Baral & Bhargava, 2011; Bhargava & Baral, 2009; Cinamon & Rich, 2010; Siu *et al.*, 2010; Taylor *et al.*, 2009; Van Steenbergen *et al.*, 2009; Wadsworth & Owens, 2007). According to Baral and Bhargava (2011)

work resources may increase the employees' perceived control over work and family matters. Such resources may also provide motivation and energy for employees and help them acquire new skills (e.g. time management skills; Friedman & Greenhaus, 2000), which may help these employees to perform better in the family domain and thus may result in enrichment between their work and family domain.

Home resources on the other hand, include those aspects of the home situation that help to reduce demands from home and foster development, growth and well-being in the home domain (Hakanen *et al.*, 2011). This includes resources such as home autonomy, home-related developmental opportunities and home support. Home autonomy implies that the person is able to decide how and when he/she may perform home tasks (Ten Brummelhuis & Bakker, 2012). Home-related developmental opportunities may be seen as the opportunities for self growth in the home domain (Demerouti *et al.*, 2010), which may enhance a person's work and thus lead to FWE. Home support may be seen as the instrumental, informational, emotional and appraisal support that a person receives from significant others, which may enhance that person's work (Ten Brummelhuis & Bakker, 2012).

According to Bhargava and Baral (2009), support obtained from the family or home environment, such as encouragement, information, help, and advice, may be used to improve the person's functioning in the work role, and thus lead to FWE. A number of antecedents in the literature are found to be related positively to FWE. These antecedents include: autonomy (Carlson *et al.*, 2006; Grzywacz & Butler, 2005; Karimi & Nouri, 2009; Siu *et al.*, 2010), developmental experiences (Carlson *et al.*, 2006), support from children (Wadsworth & Owens, 2007), support from family (Aryee *et al.*, 2005; Baral & Bhargava, 2011; Bhargava & Baral, 2009; Karatepe & Bekteshi, 2008; Siu *et al.*, 2010), support from spouse (Cinamon & Rich, 2010; Lu *et al.*, 2009) and support from family and friends (Van Steenbergen *et al.*, 2009).

The relationship between job satisfaction, career satisfaction and work-family enrichment

Job satisfaction refers to employees' feeling or affective responses to certain facets of their job and can be considered as overall satisfaction with their occupation (Tett & Meyer, 1993).

Findings from the literature revealed that WFE is associated with job satisfaction (Aryee *et al.*, 2005; Balmforth & Gardner, 2006; Boyar & Mosley, 2007; Carlson *et al.*, 2006; Jaga & Bagraim, 2011; Van Steenbergen *et al.*, 2007; Wayne *et al.*, 2004; Wayne *et al.*, 2006). According to Wayne *et al.* (2004), it may be suggested that employees' satisfaction with their job is closely linked to the degree of enrichment that their work brings to their families.

Correspondingly, career satisfaction refers to the success employees have achieved in their career and is associated with WFE. Several studies have indicated this association (Gordon *et al.*, 2007; Jaga & Bagraim, 2011). According to Gordon *et al.* (2007), employees who experience WFE and a sense of career satisfaction might be more satisfied with the success they had achieved in their careers.

The relationship between life satisfaction, family satisfaction and work-family enrichment

Life satisfaction refers to people's awareness or perceptions of life in which they compare their circumstances with a self-imposed standard and then find all aspects of their life in balance according to their own personal prospects. This state of mind contributes to their level of personal happiness (Coetzee, Bergh, & Schreuder, 2010; Diener, Emmons, Larson, & Griffin, 1985). Research findings indicate that FWE is associated with life satisfaction (Gareis *et al.*, 2009; Hill, 2005; Lu *et al.*, 2009). According to Greenhaus and Powell (2006), family participation is likely to result in the person's performance and positive affect at home. This in turn improves that person's positive affect at work. It follows that greater positive feelings and emotions about a family role should reciprocate itself in the form of increases within the family and through life satisfaction in general (Greenhaus & Powell, 2006).

Furthermore, family satisfaction is considered to be one of the general indicators of overall well-being (Parasuraman, Greenhaus, & Granrose, 1992). Studies found that FWE is related to family satisfaction (Bhargava & Baral, 2009; Boyar & Mosley, 2007; Carlson *et al.*, 2006; Carlson *et al.*, 2009; Haar & Bardoel, 2008; Hanson *et al.*, 2006; Hill, 2005; Hunter *et al.*, 2010; Jaga & Bagraim, 2011; Wayne *et al.*, 2004). This may indicate that when resources acquired in the family domain help an individual to function better in the work domain, this individual

acknowledges the source of the benefit and thus experiences greater satisfaction in the domain which he/she sees as the one providing the benefit (Carlson *et al.*, 2006).

The relationship between work engagement, family engagement and work-family enrichment

From around 1997, the movement promoting positive organisational behaviour triggered a focus on the positive antithesis of burnout, namely work engagement (Maslach, 2003; Maslach & Leiter, 1997). Work engagement refers to a positive, fulfilling, work-related state of mind that is not focused on any particular object, event, individual or behaviour (Schaufeli, Salanova, Gonzalez-Roma, & Bakker, 2002). Therefore work engagement is characterised by vigour, dedication and absorption.

Family engagement can be seen as the flipside of work engagement where people feel positive and energetic towards their family or get a sense of fulfilment from their family set-up. This engagement can also be characterised by vigour, dedication and absorption. Vigour is characterised by high levels of energy and mental resilience, the willingness to invest effort in one's work/family and persistence even in the face of difficulties (Schaufeli *et al.*, 2002). Dedication denotes "a sense of significance, enthusiasm, inspiration, pride and challenge" (Schaufeli *et al.*, 2002, p. 74). Absorption means to be fully concentrated on and deeply engrossed in one's work/family. As a result, time passes quickly and the person finds it difficult to detach him-/herself from work/family (Schaufeli *et al.*, 2002).

Research (Siu *et al.*, 2010) on work engagement found that this form of engagement mediates the relationship that supervisor support and job autonomy has with WFE. It has also been found that WFE can predict future work engagement, which in turn can predict WFE (Hakanen *et al.*, 2011). According to Siu *et al.* (2010) highly engaged employees show a strong identity with their work, attach meaning and significance to their assignments, welcome challenges in their job and entertain the belief that they will continuously learn and grow in their work (Bakker & Leiter, 2010). They also experience vigour, energy, and an up-beat mood at work, which they in turn

transfer to their family domain. There currently is a lack of research on the relationship of family engagement and FWE. Therefore this relationship should be investigated.

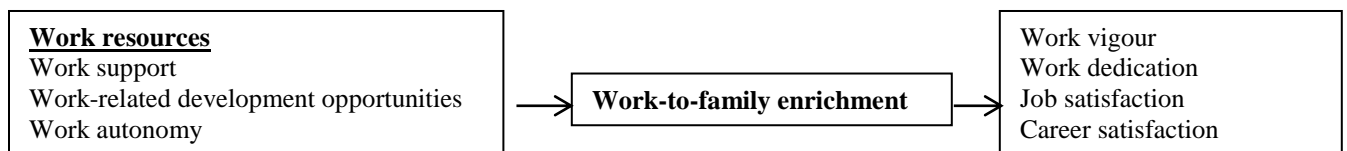
In summary, it is evident from the literature that a number of antecedents and outcomes are found to be related positively to work-family enrichment. However, within South Africa a limited amount of research has been done on this dimension. It is imperative to investigate the relationship between antecedents and outcomes of work-family enrichment as it will provide a more comprehensive understanding of the positive side of the work/family interface in the South African context.

From the literature above the following hypotheses can be suggested.

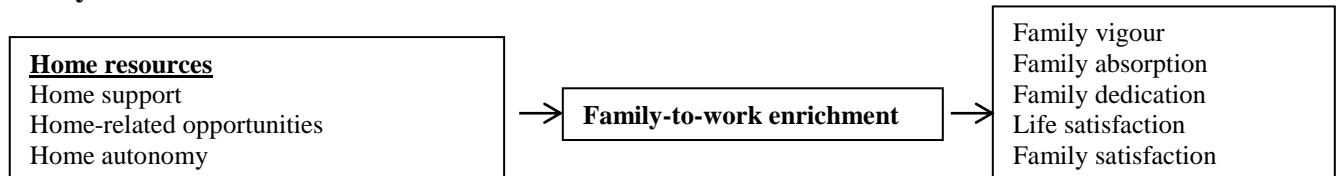
Hypotheses

From the above mentioned discussion, the following model from the JD-R theoretical framework will be presented, as well as hypotheses formulated for this model.

Work-to-family enrichment direction



Family-to-work enrichment direction



- **Hypothesis 1:** Work resources, dimensions of work-to-family enrichment (WFE), work engagement, job satisfaction and career satisfaction are significantly related to each other.

- **Hypothesis 2:** Home resources, dimensions of family-to-work enrichment (FWE), family engagement, life satisfaction and family satisfaction are significantly related to each other.
- **Hypothesis 3:** Work resources and all four dimensions of WFE will significantly predict work vigour.
- **Hypothesis 4:** Work resources and all four dimensions of WFE will significantly predict work dedication.
- **Hypothesis 5:** Home resources and all four dimensions of FWE will significantly predict family vigour.
- **Hypothesis 6:** Home resources and all four dimensions of FWE will significantly predict family dedication.
- **Hypothesis 7:** Home resources and all four dimensions of FWE will significantly predict family absorption.
- **Hypothesis 8:** Work resources and all four dimensions of WFE will significantly predict job satisfaction.
- **Hypothesis 9:** Work resources and all four dimensions of WFE will significantly predict career satisfaction.
- **Hypothesis 10:** Home resources and all four dimensions of FWE will significantly predict life satisfaction.
- **Hypothesis 11:** Home resources and all four dimensions of FWE will significantly predict family satisfaction.

Research design

Research approach

For the purpose of this study a cross-sectional survey design was utilised, where data is typically collected at one point in time. A cross-sectional survey design measures all the variables simultaneously (Blaikie, 2003) and is used to assess interrelationship among variables within a population (Struwig & Stead, 2001). Therefore such a design is suitable for the present study.

Research method

Research participants

The target population consisted of a combined purposive and convenience non-probability sample ($N = 627$) of employees working in various industries in South Africa. The aim was to include a diverse group of participants which were representative of the South African population demographics. Only employed participants were included in the sample. Table 1 shows some of the characteristics of the participants.

Table 1

Background information of the participants (N = 627)

Item	Category	Frequency	Percentage
Gender	Male	206	32.9
	Female	420	67.0
	Missing values	1	0.20
Age in years	1940 – 1949	8	1.3
	1950 – 1959	74	11.8
	1960 – 1969	123	19.6
	1970 – 1979	149	23.8
	1980 – 1989	226	36.0
	1990 – 1995	41	6.5
	Missing	6	1.0
Language	Western Germanic (Afrikaans and English)	513	81.8
	African	79	12.6
	Missing	35	5.6
Industry	Humanities	136	21.7

Table 1 continues

	Education	158	25.2
	Administrative	96	15.3
	Agricultural/Practical	225	35.9
	Missing	12	1.9
Qualification	Lower than Grade 10	7	1.1
	Grade 10	12	1.9
	Grade 11	9	1.4
	Grade 12	188	30.0
	Post Matric diploma (Technicon or Diploma)	107	17.1
	University degree	112	17.9
	Postgraduate degree	168	26.8
	Other/Missing	24	3.8
Household	Living with parents, without children	57	9.1
	Living with parents, with children	24	3.8
	Single/divorced without children	98	15.6
	Single/divorced with children	41	6.5
	Married without children	104	16.6
	Married with children	278	44.3
	Other/missing	24	3.9

Table 1 indicates that the sample was mostly female (67.0%) and the participants were between the age ranges of 24 to 33 years (36.0%). The majority of the participants were speaking a Western Germanic (Afrikaans and English) (81.8%) language. Furthermore, 44.3% of the participants were married with children and 32.9% were married without children. The participants had a grade 12 qualification. (30.0%) and 26.8% possessed a Postgraduate degree qualification. The majority of the participants worked in the agricultural/practical industry (35.9%) and the other participants work in humanities (21.7%), education (25.2%) and administrative (15.3%) industries.

Measuring instruments

Measurements were used to investigate the antecedents, work-family enrichment and outcomes. A description of the measuring instruments is given below:

Work resources: Three work resources were measured, including work support, work-related developmental opportunities and work autonomy.

Work support was measured with the scale developed by Bakker, Demerouti and Verbreke (2004) (3 items, e.g. “How often does it happen that you can count on your colleagues when you have difficulty in your work?”). These work-support items were rated on a four-point Likert scale ranging from 0 (*never*) to 3 (*always*). Cronbach’s alpha coefficients were found that ranged between 0.81 and 0.85 for *work support* (Bakker *et al.*, 2004; Bakker, Demerouti, & Euwema, 2005).

Work-related developmental opportunities were assessed by 3 items that were conceptually mirrored from existing scales of home developmental opportunities developed by Demerouti, Bakker and Voydanoff (2009). An example item was: “How often does it happen that at your work, you have the opportunity to develop your strong points?” These items for work-related developmental opportunities were rated on a four-point Likert scale ranging from 0 (*never*) to 3 (*always*).

Work autonomy was measured with the scale developed by Bakker *et al.* (2004) (3 items, e.g. “How often does it happen that you have a say in decisions that affect your work?”). Cronbach’s alpha coefficients were found that ranged between 0.68 and 0.74 for *work autonomy* (Bakker *et al.*, 2004; Bakker, Demerouti, & Euwema, 2005).

Home resources: The home resources were developed by Demerouti *et al.* (2009) and conceptually mirror existing scales of work resources, since several scholars have successfully employed a work-related measurement as a model for constructing a symmetrical home-related measuring instrument (Frone & Rice, 1987; Frone, Russell, & Cooper, 1992; Parasuraman, Purohit, Godshalk, & Beutell, 1996).

Home support was measured with 4 items, including: “How often does it happen that your partner or family members show that they value you for the work you do at home?” These items for home support were rated on a four-point Likert scale ranging from 0 (*never*) to 3 (*always*).

Reliable Cronbach's alpha coefficients were found, with home support = 0.70 (Koekemoer & Mostert, 2010).

Home-related developmental opportunities were assessed by 3 items, including: "How often does it happen that in your free time you have the opportunity to develop yourself?" These items for home-related developmental opportunities were rated on a four-point Likert scale ranging from 0 (*never*) to 3 (*always*). Sufficient Cronbach's alpha coefficients were found, with home-related development possibilities = 0.82 (Koekemoer & Mostert, 2010).

Home autonomy was assessed with 4 items, including: "How often does it happen that you decide for yourself how you spend your leisure time?" These items for home autonomy were rated on a four-point Likert scale ranging from 0 (*never*) to 3 (*always*). Acceptable alpha coefficients were found by Demerouti *et al.* (2009). Sufficient Cronbach's alpha coefficients were found, with home autonomy = 0.64 (Koekemoer & Mostert, 2010).

Work-Family Enrichment Instrument: The 34-item MACE Work-Family Enrichment Instrument (De Klerk *et al.*, 2013; See Appendix B) was used to measure dimensions of WFE and FWE. The WFE dimensions consisted of *work-family perspectives* (6 items; i.e., "My family life is improved by my work showing me different viewpoints"), *work-family affect* (3 items; i.e., "My family life is improved by my work that puts me in a good mood"), *work-family time management* (6 items; i.e., "My family life is improved by managing my time at work"), and *work-family socio-capital* (3 items; i.e., "My family life is improved by maintaining good relationships with my colleagues").

Dimensions of FWE consisted of *family-work perspectives* (5 items; i.e., "My work is improved by the skills I learn in my family life"), *family-work affect* (5 items; i.e., "My work is improved by being optimistic about my family life"), *family-work time management* (3 items; i.e., "My work is improved by keeping a sufficient pace in my family life") and *family-work socio-capital* (3 items; i.e., "My work is improved by being supportive in my family life"). Respondents indicated their levels of agreement to each statement on a four-point scale; (1) "Disagree", (2) "Neither agree nor disagree", (3) "Agree" and (4) "Strongly agree". Reliable Cronbach's alpha

coefficients were found, according to which work-family perspectives is 0.91, work-family affect is 0.84, work-family time management is 0.90, work-family socio-capital is 0.80, family-work perspectives is 0.89, family-work affect is 0.89, family-work time management is 0.83, and family-work socio-capital is 0.78 (De Klerk *et al.*, 2013).

Engagement: *Work Engagement:* The Utrecht Work Engagement Scale (UWES) (Schaufeli *et al.*, 2002) was used in this study. Eight items of the scale were used, consisting of two scales; *work vigour* (4 items), and *work dedication* (4 items). Examples of statements were: “At my work, I feel bursting with energy”; and “At my job, I feel strong and vigorous” (Schaufeli *et al.*, 2002). The instrument was scored on a seven-point frequency rating varying from 1 (*never*) to 7 (*every day*). In a study conducted by Storm (2002) on the South African Police Service the following alpha coefficients were achieved on the dimensions: work vigour = 0.78 and work dedication = 0.89.

Family Engagement: 12 items of the UWES scale was used to measure *family vigour* (5 items), *family absorption* (4 items) and *family dedication* (3 items). Examples of statements were: “I am enthusiastic about spending time with my family”; “When I am with my family, I forget everything else around me” and “With my family I feel energised”. The instrument was scored on a seven-point frequency rating varying from 1 (*never*) to 7 (*every day*).

Satisfaction:

Job satisfaction: Three items developed by Hellgren, Sjöberg and Sverke (1997) were used to measure job satisfaction. The response alternatives ranged from 1 (*disagree*) to 5 (*agree*), and a high score reflects satisfaction with the job. A sample item was: “I enjoy being at my job”. Cronbach’s alpha reliability as reported by Helgren *et al.* (1997) was high (0.88).

Career satisfaction: Four items developed by Greenhaus, Parasuraman and Wormley (1990) were used to measure career satisfaction. The responses were measured on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A sample item was: “In general, I like my career”. Cronbach’s alpha reliability for this scale as reported by Greenhaus *et al.* (1990) was 0.88.

Life satisfaction: Four items from the Satisfaction with Life Scale (SWLS, Diener *et al.*, 1985) were used to measure life satisfaction (4 items, e.g. “So far I have gotten the important things I want in life.”; “In most ways my life is close to my ideal”). Items were rated on a seven-point scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Diener *et al.* (1985) found the scale to be reliable with an alpha coefficient of 0.87 and test-retest reliability of 0.82.

Family satisfaction: A four-item scale developed by Greenhaus *et al.* (1990) was used to measure family satisfaction. The responses was measured on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A sample item was: “In general, I like my family life”. Cronbach’s alpha reliability for this scale, as reported in a study by Dyson-Washington (2006), was high 0.92.

Research procedure and ethical considerations

The proposed research was presented to the Research Committee of a higher education institution. After ethical clearance was obtained by the university’s Ethics Committee, field workers distributed questionnaires to the employees who are working in various industries. A letter requesting participation was included in the questionnaire booklet, as well as an explanation of ethical aspects and a motivation about the importance of the research. Furthermore, in the letter assurances were given to participants on the anonymity and confidentiality with which the information would be handled. These participants were given various options for returning the questionnaires to the researchers (e.g. internal post, personal collection, electronic mail). All participants were given two to three weeks to complete the questionnaires.

Statistical analysis

The SPSS programme (IBM SPSS Statistics 20, 2013) and AMOS programme (Arbuckle, 2011) was used to carry out the statistical analysis. The construct validity of these measuring instruments was tested by using confirmatory factor analysis (CFA). The χ^2 and several other

goodness-of-fit indices were used to summarise the degree of correspondence between the implied and observed covariance matrices. The following goodness-of-fit indices were used as adjuncts to the likelihood-ratio chi square (χ^2) statistics: a) the root square of approximation (RMSEA); b) The Comparative Fit Index (CFI); and c) Tucker-Lewis Index (TLI) and d) the Incremental Fit Index (IFI). The CFI, TLI and IFI were used in the likelihood of ratio chi square (χ^2) being sensitive to sample size – which means the probability of rejecting a hypothesised model increases with sample size (Bentler, 1990). Acceptable fit of the model was indicated by non-significant χ^2 values, values smaller than or equal to 0.90 for CFI, TLI and IFI, also RMSEA values smaller than or equal to 0.08 (Browne & Cudeck, 1993).

Cronbach's alpha coefficients were used to determine the reliability. To analyse the data further, descriptive statistics was used (e.g. means and standard deviations). Furthermore, Product-moment correlation coefficients were used to specify the relationship between the variables. In terms of statistical significance it was decided to set the value at a 95% confidence interval level ($p < 0.05$). Because statistical significance may show results that are practically of little relevance, effect sizes were used to determine the practical significance of the relationship (Cohen, 1988; Steyn, 2002). The cut-off point for practical significance of the correlation coefficients was set at 0.30 (medium effect) and 0.50 (large effect) (Cohen, 1988).

Multiple-regression analyses were carried out to determine the percentage variance explained in the dependent variable (i.e. work vigour, work dedication, family vigour, family absorption, family dedication, job satisfaction, career satisfaction, life satisfaction and family satisfaction). These are predicted by the independent variables (i.e. work resources, home resources, WFE dimensions and FWE dimensions).

Results

The results are given below of the following: the construct validity of the measuring instruments, descriptive statistics, Cronbach's alpha coefficients and product-moment correlations.

Construct validity of the measuring instruments

Before analysing the data, the construct validity of these measuring instruments was tested by using structural equation modelling.

Construct validity for work resources and home resources

The results supported a three-factor model for work resources (work support, work-related developmental opportunities and work autonomy: $\chi^2 = 122.73$ ($N = 627$), IFI = 0.95, TLI = 0.93 and CFI = 0.95; RMSEA = 0.08). Furthermore, the results supported a three-factor model for home resources (home support, home-related developmental opportunities and home autonomy: $\chi^2 = 185.95$ ($N = 627$), IFI = 0.95, TLI = 0.93 and CFI = 0.95; RMSEA = 0.08).

Construct validity for work-to-family enrichment (WFE) and family-to-work enrichment(FWE)

The results supported a four-factor model for WFE (work-family perspectives, work-family affect, work-family time management, work-family socio-capital: $\chi^2 = 364.31$ ($N = 627$), IFI = 0.97, TLI = 0.96 and CFI = 0.97; RMSEA = 0.05) and a four-factor model for FWE: (family-work perspectives, family-work affect, family-work time management, family socio-capital: $\chi^2 = 455.19$ ($N = 627$), IFI = 0.95, TLI = 0.93 and CFI = 0.95; RMSEA = 0.08).

Construct validity for work engagement and family engagement

The results indicated a two-factor model for work engagement: (work vigour and work dedication: $\chi^2 = 88.44$ ($N = 627$), IFI = 0.98, TLI = 0.97 and CFI = 0.98; RMSEA = 0.08); and a three-factor model for family engagement: (family vigour, family absorption and family dedication: $\chi^2 = 246.00$ ($N = 627$), IFI = 0.96, TLI = 0.95 and CFI = 0.96; RMSEA = 0.08).

Construct validity for satisfaction

The results showed a one-factor model for career satisfaction: ($\chi^2 = 2.66$ ($N = 627$), IFI = 1.00, TLI = 1.00 and CFI = 1.00; RMSEA = 0.02); a one-factor model for life satisfaction: ($\chi^2 = 2.91$ ($N = 627$), IFI = 1.00, TLI = 1.00 and CFI = 1.00; RMSEA = 0.03); and a one-factor model for family satisfaction: ($\chi^2 = 5.52$ ($N = 627$), IFI = 1.00, TLI = 0.99 and CFI = 1.00 ; RMSEA = 0.05).

Descriptive statistics, Cronbach's alpha coefficients and product-moment correlations

The descriptive statistics, Cronbach's alpha coefficients and product-moment correlations of the measuring instruments were done. The results for the WFE direction are reported in Table 2 and the results for the FWE direction are reported in Table 3 on the following pages.

Table 2

Descriptive Statistics, Cronbach's alpha coefficients and product-moment correlations for work resources, work-to-family enrichment dimensions, work engagement, job satisfaction and career satisfaction.

Item	M	SD	α	1	2	3	4	5	6	7	8	9	10
1. Work support	2.99	0.65	0.74	-	-	-	-	-	-	-	-	-	-
2. Work-related developmental opportunities	2.94	0.75	0.84	0.45 ⁺	-	-	-	-	-	-	-	-	-
3. Work autonomy	2.93	0.66	0.70	0.44 ⁺	0.53 ^{***}	-	-	-	-	-	-	-	-
4. Work-family perspectives	2.74	0.65	0.91	0.24 ⁺	0.42 ⁺	0.33 ⁺	-	-	-	-	-	-	-
5. Work-family affect	2.65	0.78	0.84	0.30 ⁺	0.42 ⁺	0.36 ⁺	0.54 ^{***}	-	-	-	-	-	-
6. Work-family time management	2.72	0.67	0.90	0.22 ⁺	0.34 ⁺	0.32 ^{***}	0.60 ^{***}	0.56 ^{***}	-	-	-	-	-
7. Work-family socio-capital	2.74	0.68	0.80	0.43 ⁺	0.29 ⁺	0.28 ⁺	0.55 ^{***}	0.56 ^{***}	0.63 ^{***}	-	-	-	-
8. Work vigour	5.40	1.18	0.85	0.32 ⁺	0.44 ⁺	0.46 ⁺	0.30 ⁺	0.39 ⁺	0.29 ⁺	0.26 ⁺	-	-	-
9. Work dedication	5.44	1.50	0.93	0.38 ⁺	0.50 ^{***}	0.43 ⁺	0.40 ⁺	0.48 ⁺	0.30 ⁺	0.27 ⁺	0.79 ^{***}	-	-
10. Job satisfaction	3.95	1.01	0.88	0.33 ⁺	0.48 ⁺	0.43 ⁺	0.41 ⁺	0.43 ⁺	0.33 ⁺	0.29 ⁺	0.60 ^{***}	0.70 ^{***}	-
11. Career satisfaction	3.80	1.03	0.91	0.26 ⁺	0.52 ^{***}	0.43 ⁺	0.41 ⁺	0.42 ⁺	0.34 ⁺	0.26 ⁺	0.60 ^{***}	0.71 ^{***}	0.89 ^{***}

⁺ Statistically significant ($p < 0.01$)

* Correlation is practically significant $r > 0.30$ (medium effect); ** Correlation is practically significant $r > 0.50$ (large effect)

It is evident from Table 2 that acceptable Cronbach's alpha coefficients were obtained for all scales since it was higher than the guideline of $\alpha > 0,70$ for research purposes (Nunnally & Bernstein, 1994), ranging from 0.70 to 0.93. It therefore appears that all the measuring instruments have acceptable levels of internal consistency.

Furthermore, the variables indicated practical significant relationships in terms of the following: work-family perspectives related (with a medium effect) to work-related developmental opportunities, work autonomy, work vigour, work dedication, job satisfaction and career satisfaction. Work-family affect related (with a medium effect) to all three work resources, work vigour, work dedication, job satisfaction and career satisfaction. Furthermore work-family time management related (with a medium effect) to work-related developmental opportunities, work autonomy, work dedication, job satisfaction and career satisfaction. Work-family socio-capital related (with a medium effect) to work support. Work vigour related (with a medium effect) to all three work resources. Work dedication were related (with a medium effect) to work support and work autonomy and also to work-related development opportunities (with a large effect). Job satisfaction were related (with a medium effect) to all three work resources. Career satisfaction was related to work-related development opportunities (with a large effect) and also to work autonomy (with a medium effect).

From the results above partial acceptance for hypothesis 1 is provided, which means that work resources, dimensions of work-to-family enrichment (WFE), work engagement, job satisfaction and career satisfaction are significantly related to each other.

The results for the family-to-work enrichment direction are reported in Table 3 below.

Table 3

Descriptive Statistics, Cronbach's alpha coefficients and product-moment correlations for home resources, family-to-work enrichment dimensions and family engagement, life satisfaction and family satisfaction.

Item	M	SD	α	1	2	3	4	5	6	7	8	9	10	11
1. Home support	3.05	0.63	0.81	-	-	-	-	-	-	-	-	-	-	-
2. Home-related developmental opportunities	2.91	0.69	0.82	0.56 ^{***}	-	-	-	-	-	-	-	-	-	-
3. Home autonomy	3.04	0.58	0.76	0.48 ⁺	0.61 ^{***}	-	-	-	-	-	-	-	-	-
4. Family-work perspectives	2.99	0.61	0.89	0.37 ⁺	0.31 ⁺	0.24 ⁺	-	-	-	-	-	-	-	-
5. Family-work affect	3.08	0.61	0.88	0.40 ⁺	0.26 ⁺	0.24 ⁺	0.75 ^{***}	-	-	-	-	-	-	-
6. Family-work time management	2.95	0.67	0.83	0.34 ⁺	0.27 ⁺	0.26 ⁺	0.69 ^{***}	0.72 ^{***}	-	-	-	-	-	-
7. Family-work socio-capital	3.14	0.61	0.78	0.42 ⁺	0.25 ⁺	0.25 ⁺	0.78 ^{***}	0.70 ^{***}	0.70 ^{***}	-	-	-	-	-
8. Family vigour	5.97	1.12	0.89	0.42 ⁺	0.23 ⁺	0.19 ⁺	0.25 ⁺	0.33 ⁺	0.25 ⁺	0.31 ⁺	-	-	-	-
9. Family absorption	5.80	1.17	0.76	0.33 ⁺	0.19 ⁺	0.12 ⁺	0.24 ⁺	0.29 ⁺	0.28 ⁺	0.28 ⁺	0.70 ^{***}	-	-	-
10. Family dedication	6.14	1.17	0.85	0.41 ⁺	0.21 ⁺	0.18 ⁺	0.24 ⁺	0.34 ⁺	0.24 ⁺	0.33 ⁺	0.77 ^{***}	0.71 ^{***}	-	-
11. Life satisfaction	3.74	0.93	0.82	0.41 ⁺	0.28 ⁺	0.26 ⁺	0.30 ⁺	0.36 ⁺	0.33 ⁺	0.33 ⁺	0.38 ⁺	0.33 ⁺	0.35 ^{***}	-
12. Family satisfaction	4.20	0.85	0.88	0.46 ⁺	0.30 ⁺	0.25 ⁺	0.30 ⁺	0.36 ⁺	0.29 ⁺	0.32 ⁺	0.57 ^{***}	0.47 ⁺	0.59 ^{***}	0.67 ^{***}

⁺ Statistically significant ($p < 0.01$)

* Correlation is practically significant $r > 0.30$ (medium effect); ** Correlation is practically significant $r > 0.50$ (large effect)

Table 3 indicates that Cronbach's alpha coefficients show acceptable levels of reliability, since the scores obtained for the measuring instruments are higher than the $\alpha > 0.70$ guideline for research purposes (Nunnally & Bernstein, 1994), ranging from 0.76 to 0.89. Furthermore, the variables indicated the following statistically and practically significant relationships: family-work perspectives related (with a medium effect) to home support, home-related developmental opportunities, life satisfaction and family satisfaction. Family-work affect was related (with a medium effect) to home support, family vigour, family dedication, life satisfaction and family satisfaction. Furthermore, family-work was related (with a medium effect) to home support and life satisfaction. Family-work socio-capital was practically significantly (with a medium effect) correlated to home support, family vigour, family dedication, life satisfaction and family satisfaction. Family vigour, family absorption and family dedication were all related (with a medium effect) to home support. Furthermore, life satisfaction were related (with a medium effect) to home support. Family satisfaction were related (with a medium effect) to home support and home-related development opportunities.

From the results above partial acceptance for hypothesis 2 is provided, which means that home resources, dimensions of family-to-work enrichment (FWE), family engagement, life satisfaction and family satisfaction are significantly related to each other.

Following the results of the construct validity of the measuring instruments, descriptive statistics, Cronbach's alpha coefficients and product-moment correlations, the following tables indicate the multiple-regression analyses for the various dependent variables.

Multiple Regression analyses

Multiple regression analyses were performed and the results are reported in Tables 4 to 12. The dependent variables respectively were: work vigour (Table 4), work dedication (Table 5), family vigour (Table 6), family dedication (Table 7), family absorption (Table 8), job satisfaction (Table 9), career satisfaction (Table 10), life satisfaction (Table 11) and family satisfaction (Table 12).

The results of a multiple regression analysis done with work vigour as dependent variable are projected in Table 4. Work support, work-related developmental opportunities and work autonomy were entered in the first step and WFE dimensions in the second step.

Table 4

Multiple Regression analysis with work vigour as dependent variable

Model		Unstandardised coefficients		Standardised coefficients	<i>t</i>	<i>p</i>	<i>F</i>	<i>R</i>	<i>R</i> ²	ΔR^2
		B	SE	Beta						
1	(Constant)	2.30	0.22		10.37	0.00*	76.65	0.52	0.27	0.27
	Work support	0.13	0.07	0.07	1.80	0.07				
	Work-related developmental opportunities	0.39	0.07	0.25	5.99	0.00*				
	Work autonomy	0.53	0.07	0.30	7.12	0.00*				
2	(Constant)	1.99	0.24		8.19	0.00*	38.29	0.55	0.30	0.29
	Work support	0.12	0.08	0.07	1.54	0.13				
	Work-related developmental opportunities	0.29	0.07	0.18	4.18	0.00*				
	Work autonomy	0.46	0.07	0.26	6.20	0.00*				
	Work-family perspectives	0.04	0.08	0.02	0.50	0.61				
	Work-family affect	0.29	0.07	0.19	4.25	0.00*				
	Work-family time management	0.05	0.09	0.03	0.62	0.54				
	Work-family socio-capital	-0.06	0.09	-0.04	-0.73	0.47				

* $p < 0.05$

Table 4 summarises the regression analysis done with work resources and WFE dimensions as predictors of work vigour. Entries of work support, work-related developmental opportunities and work autonomy in the first step, produced a statistically significant model ($F_{(3,623)} = 76.65$; $p = 0.00$) accounting for 27% of the total variance. More specifically, it was shown that work-related developmental opportunities ($\beta = 0.25$; $t = 5.99$; $p \leq 0.05$) and work autonomy ($\beta = 0.30$; $t = 7.12$; $p \leq 0.05$) predict work vigour. When work-family perspectives, work-family affect, work-family time management and work-family socio-capital were added in the second step of the regression analysis, a statistically significant model was produced ($F_{(7,619)} = 38.29$; $p = 0.00$; $\Delta R^2 = 0.29$), which explained 30% of the total variance. It was shown that work-family affect ($\beta = 0.19$; $t = 4.25$; $p \leq 0.05$) is a significant predictor of work vigour.

From the results above partial acceptance is provided for hypothesis 3, which means that some work resources and some dimensions of WFE significantly predict work vigour.

The results of a multiple regression analysis done with work dedication as dependent variable are projected in Table 5. Work support, work-related developmental opportunities and work autonomy were entered in the first step, and WFE dimensions in the second step.

Table 5

Multiple regression analysis with work dedication as dependent variable

Model		Unstandardised coefficients		Standardised coefficients	<i>t</i>	<i>p</i>	<i>F</i>	<i>R</i>	<i>R</i> ²	ΔR^2
		B	SE	Beta						
1	(Constant)	1.58	0.28		5.74	0.00*	89.28	0.55	0.30	0.30
	Work support	0.06	0.09	0.03	0.63	0.53				
	Work-related developmental opportunities	0.81	0.08	0.41	9.91	0.00*				
	Work autonomy	0.44	0.09	0.20	4.78	0.00*				
2	(Constant)	1.03	0.30		3.48	0.00*	50.73	0.60	0.37	0.36
	Work support	0.07	0.09	0.03	0.74	0.46				
	Work-related developmental opportunities	0.60	0.08	0.30	7.18	0.00*				
	Work autonomy	0.33	0.09	0.15	3.62	0.00*				
	Work-family perspectives	0.30	0.10	0.13	2.92	0.00*				
	Work-family affect	0.49	0.08	0.26	5.95	0.00*				
	Work-family time management	-0.04	0.10	-0.02	-0.33	0.74				
	Work-family socio-capital	-0.20	0.11	-0.09	-1.90	0.06				

* $p < 0.05$

Table 5 indicates the regression analysis done with work resources and WFE dimensions as predictors of work dedication. Entries of work support, work-related developmental opportunities and work autonomy in the first step, produced a statistically significant model ($F_{(3,623)} = 89.28$; $p = 0.00$) accounting for 30% of the total variance. More specifically, it was shown that work-related developmental opportunities ($\beta = 0.41$; $t = 9.91$; $p \leq 0.05$) and work

autonomy ($\beta = 0.20$; $t = 4.78$; $p \leq 0.05$) predict work dedication. When WFE dimensions were added (second step), the results produced a statistically significant model ($F_{(7,619)} = 50.73$; $p = 0.00$; $\Delta R^2 = 0.36$) accounting for 37% of the total variance. It was shown that work-family perspectives ($\beta = 0.13$; $t = 2.92$; $p \leq 0.05$) and work-family affect ($\beta = 0.26$; $t = 5.95$; $p \leq 0.05$) are significant predictors of work dedication.

From the results above partial acceptance is provided for hypothesis 4, which means that some work resources and some dimensions of WFE significantly predict work dedication.

The results of a multiple regression analysis done with family vigour as dependent variable are projected in Table 6. Home support, home-related developmental opportunities and home autonomy were entered in the first step and FWE dimensions in the second step.

Table 6

Multiple regression analysis with family vigour as dependent variable

Model		Unstandardised coefficients		Standardised coefficients	<i>t</i>	<i>p</i>	<i>F</i>	<i>R</i>	<i>R</i> ²	ΔR^2
		B	SE	Beta						
1	(Constant)	3.80	0.24		15.78	0.00*	48.66	0.44	0.19	0.19
	Home support	0.83	0.08	0.47	10.48	0.00*				
	Home-related developmental opportunities	-0.05	0.08	-0.03	-0.62	0.58				
	Home autonomy	-0.07	0.09	-0.04	-0.81	0.42				
2	(Constant)	2.96	0.27		11.04	0.00*	30.50	0.51	0.26	0.25
	Home support	0.64	0.08	0.36	7.82	0.00*				
	Home-related developmental opportunities	-0.03	0.08	-0.02	-0.33	0.74				
	Home autonomy	-0.11	0.09	-0.06	-1.24	0.22				
	Family-work perspectives	-0.22	0.11	-0.12	-1.99	0.05*				
	Family-work affect	0.51	0.12	0.28	4.41	0.00*				
	Family-work time management	-0.04	0.09	-0.03	-0.49	0.63				
	Family-work socio-capital	0.22	0.12	0.12	1.82	0.07				

* $p < 0.05$

Table 6 summarises the regression analysis done with home resources and FWE dimensions as predictors of family vigour. Entries of home support, home-related developmental opportunities and home autonomy in the first step, produced a statistically significant model ($F_{(3,623)} = 48.66$; $p = 0.00$) accounting for 19% of the total variance. More specifically, it was shown that home support ($\beta = 0.47$; $t = 10.48$; $p \leq 0.05$) predict family vigour. When FWE dimensions were added into the second step of the regression analysis, a statistically significant model were produced ($F_{(7,619)} = 30.50$; $p = 0.00$; $\Delta R^2 = 0.25$) accounting for 26% of the total variance. It was shown that family-work perspectives ($\beta = -0.12$; $t = -1.99$; $p \leq 0.05$) and family-work affect ($\beta = 0.28$; $t = 4.41$; $p \leq 0.05$) are significant predictors of family vigour.

From the results above partial acceptance is provided for hypothesis 5, which means that numerous home resources and dimensions of FWE significantly predict family vigour.

The results of a multiple regression analysis with family dedication as dependent variable are projected in Table 7. Home support, home-related development opportunities and home autonomy were entered in the first step and FWE dimensions in the second step.

Table 7

Multiple regression analysis with family dedication as dependent variable

Model		Unstandardised coefficients		Standardised coefficients	<i>t</i>	<i>p</i>	<i>F</i>	<i>R</i>	<i>R</i> ²	ΔR^2
		B	SE	Beta						
1	(Constant)	4.13	0.26		16.21	0.00*	40.58	0.40	0.16	0.16
	Home support	0.81	0.08	0.44	9.69	0.00*				
	Home-related developmental opportunities	-0.03	0.08	-0.02	-0.36	0.72				
	Home autonomy	-0.17	0.10	-0.06	-1.33	0.19				
2	(Constant)	3.31	0.29		11.60	0.00*	25.78	0.48	0.23	0.22
	Home support	0.62	0.09	0.34	7.17	0.00*				
	Home-related developmental opportunities	-0.01	0.08	-0.00	-0.07	0.94				
	Home autonomy	-0.16	0.09	-0.08	-1.71	0.09				
	Family-work perspectives	-0.21	0.12	-0.11	-1.79	0.08				

Table 7 continues

Family-work affect	0.56	0.12	0.30	4.55	0.00*
Family-work time management	-0.09	0.10	-0.05	-0.92	0.36
Family-work socio-capital	0.20	0.13	0.10	1.50	0.13

* $p < 0.05$

Table 7 summarises the regression analysis done with home resources and FWE dimensions as predictors of family dedication. Entries of home support, home-related developmental opportunities and home autonomy in the first step, produced a statistically significant model ($F_{(3,623)} = 40.58$; $p = 0.00$) accounting for 16% of the total variance. More specifically, it was shown that home support ($\beta = 0.44$; $t = 9.69$; $p \leq 0.05$) predict family dedication. When family-work perspectives, family-work affect, family-work time management and family-work socio-capital items were added into the second step of the regression analysis, a statistically significant model were produced ($F_{(7,619)} = 25.78$; $p = 0.00$; $\Delta R^2 = 0.22$) accounting for 23% of the total variance. It was shown that family-work affect ($\beta = 0.30$; $t = 4.55$; $p \leq 0.05$) is a significant predictor of family dedication.

From the results above partial acceptance is provided for hypothesis 6, which mean that several home resources and several dimensions of FWE significantly predict family dedication.

The results of a multiple regression analysis done with family absorption as dependent variable are projected in Table 8. Home support, home-related development opportunities and home autonomy were entered in the first step and FWE dimensions in the second step.

Table 8

Multiple regression analysis with family absorption as dependent variable

Model		Unstandardised coefficients		Standardised coefficients	t	p	F	R	R^2	ΔR^2
		B	SE	Beta						
1	(Constant)	4.02	0.26		15.36	0.00*	30.66	0.36	0.13	0.12
	Home support	0.71	0.09	0.38	8.19	0.00*				
	Home-related developmental opportunities	0.03	0.09	0.02	0.34	0.74				
	Home autonomy	-0.15	0.10	-0.07	-1.51	0.13				

Table 8 continues

Model		Unstandardised coefficients		Standardised coefficients	<i>t</i>	<i>p</i>	<i>F</i>	<i>R</i>	<i>R</i> ²	ΔR^2
		B	SE	Beta						
2	(Constant)	3.15	0.29		10.74	0.00*	20.22	0.43	0.19	0.18
	Home support	0.52	0.09	0.28	5.81	0.00*				
	Home-related developmental opportunities	0.04	0.09	0.02	0.46	0.65				
	Home autonomy	-0.19	0.10	-0.09	-2.01	0.05*				
	Family-work perspectives	-0.20	0.12	-0.10	-1.63	0.12				
	Family-work affect	0.34	0.13	0.18	2.68	0.01*				
	Family-work time management	0.13	0.10	0.08	1.33	0.18				
	Family-work socio-capital	0.22	0.13	0.11	1.66	0.10				

* $p < 0.05$

Table 8 summarises the regression analysis done with home resources and FWE as predictors of family absorption. Entries of the home resources (i.e. home support, home-related developmental opportunities and home autonomy) in the first step, produced a statistically significant model ($F_{(3,623)} = 30.66$; $p = 0.00$) accounting for 13% of the total variance. More specifically, it appeared that home support ($\beta = 0.38$; $t = 8.19$; $p \leq 0.05$) predict family absorption. When FWE dimensions were added into the second step of the regression analysis, a statistically significant model were produced ($F_{(7,619)} = 20.22$; $p = 0.00$; $\Delta R^2 = 0.18$) accounting for 19% of the total variance. It was shown that family-work affect ($\beta = 0.18$; $t = 2.68$; $p \leq 0.05$) is a significant predictor of family absorption.

From the results above partial acceptance is provided for hypothesis 7, which means that some home resources and dimensions of FWE significantly predict family absorption.

The results of a multiple regression analysis done with job satisfaction as dependent variable are projected in Table 9. Work support, work-related development opportunities and work autonomy were entered in the first step and WFE dimensions in the second step.

Table 9

Multiple regression analysis with job satisfaction as dependent variable

Model		Unstandardised coefficients		Standardised coefficients	<i>t</i>	<i>p</i>	<i>F</i>	<i>R</i>	<i>R</i> ²	ΔR^2
		B	SE	Beta						
1	(Constant)	1.20	0.18		6.51	0.00*	94.59	0.56	0.31	0.31
	Work support	0.08	0.06	0.05	1.34	0.18				
	Work-related developmental opportunities	0.49	0.06	0.36	8.95	0.00*				
	Work autonomy	0.37	0.06	0.24	5.95	0.00*				
2	(Constant)	0.75	0.20		3.80	0.00*	52.41	0.61	0.37	0.37
	Work support	0.09	0.06	0.06	1.52	0.13				
	Work-related developmental opportunities	0.34	0.06	0.26	6.16	0.00*				
	Work autonomy	0.29	0.06	0.19	4.75	0.00*				
	Work-family perspectives	0.24	0.07	0.16	3.55	0.00*				
	Work-family affect	0.26	0.06	0.21	4.76	0.00*				
	Work-family time management	0.03	0.07	0.02	0.47	0.64				
	Work-family socio-capital	-0.14	0.07	-0.10	-2.01	0.05*				

* $p < 0.05$

Table 9 indicates the regression analysis done with work resources and WFE as predictors of job satisfaction. Entries of work support, work-related developmental opportunities and work autonomy in the first step, produced a statistically significant model ($F_{(3,623)} = 94.59$; $p = 0.00$) accounting for 31% of the total variance. More specifically, it was shown that work-related developmental opportunities ($\beta = 0.36$; $t = 8.95$; $p \leq 0.05$) and work autonomy ($\beta = 0.24$; $t = 5.95$; $p \leq 0.05$), predict job satisfaction. When WFE dimensions were added (second step), the results produced a statistically significant model ($F_{(7,619)} = 52.41$; $p = 0.00$; $\Delta R^2 = 0.37$) accounting for 37% of the total variance. It appears that work-family perspectives ($\beta = 0.16$; $t = 3.55$; $p \leq 0.05$), work-family affect ($\beta = 0.21$; $t = 4.76$; $p \leq 0.05$) and work-family socio-capital ($\beta = -0.10$; $t = -2.01$; $p \leq 0.05$) are significant predictors of job satisfaction.

From the results above partial acceptance is provided for hypothesis 8, which means that several work resources and dimensions of WFE significantly predict job satisfaction.

The results of a multiple regression analysis done with career satisfaction as dependent variable are projected in Table 10. Work support, work-related development opportunities and work autonomy were entered in the first step and WFE dimensions in the second step.

Table 10

Multiple regression analysis with career satisfaction as dependent variable

Model		Unstandardised coefficients		Standardised coefficients	<i>t</i>	<i>p</i>	<i>F</i>	<i>R</i>	<i>R</i> ²	ΔR^2
		B	SE	Beta						
1	(Constant)	1.22	0.19		6.40	0.00*	91.51	0.55	0.31	0.30
	Work support	-0.04	0.06	-0.03	-0.67	0.51				
	Work-related developmental opportunities	0.57	0.06	0.42	10.18	0.00*				
	Work autonomy	0.35	0.06	0.22	5.47	0.00*				
	Work-family time management	0.07	0.07	0.05	1.00	0.32				
	Work-family socio-capital	-0.13	0.07	-0.09	-1.82	0.07				
2	(Constant)	0.71	0.20		3.49	0.00*	50.23	0.60	0.36	0.36
	Work support	-0.03	0.06	-0.02	-0.44	0.66				
	Work-related developmental opportunities	0.43	0.06	0.31	7.41	0.00*				
	Work autonomy	0.27	0.06	0.17	4.24	0.00*				
	Work-family perspectives	0.25	0.07	0.16	3.60	0.00*				
	Work-family affect	0.23	0.06	0.17	3.99	0.00*				
	Work-family time management	0.07	0.07	0.05	1.00	0.32				
	Work-family socio-capital	-0.13	0.07	-0.09	-1.82	0.07				

* $p < 0.05$

Table 10 summarises the regression analysis done with work resources and WFE as predictors of career satisfaction. Entries of work support, work-related developmental opportunities and work autonomy in the first step, produced a statistically significant model ($F_{(3, 623)} = 91.51$; $p = 0.00$) accounting for 31% of the total variance. More specifically, it was shown that work-related

developmental opportunities ($\beta = 0.42$; $t = 10.18$; $p \leq 0.05$) and work autonomy ($\beta = 0.22$; $t = 5.47$; $p \leq 0.05$) predict career satisfaction. When work-family perspectives, work-family affect, work-family time management and work-family socio-capital was added in the second step of the regression analysis, a statistically significant model was produced ($F_{(7,619)} = 50.23$; $p = 0.00$; $\Delta R^2 = 0.36$), which explained 36% of the total variance. It appears that work-family perspectives ($\beta = 0.16$; $t = 3.60$; $p \leq 0.05$) and work-family affect ($\beta = 0.17$; $t = 3.99$; $p \leq 0.05$) are significant predictors of career satisfaction.

From the results above partial acceptance is provided for hypothesis 9, which means that several work resources and dimensions of WFE significantly predict career satisfaction.

The results of a multiple regression analysis done with life satisfaction as dependent variable are projected in Table 11. Home support, home-related development opportunities and home autonomy were entered in the first step and FWE dimensions in the second step.

Table 11

Multiple regression analyses with life satisfaction as dependent variable

Model		Unstandardised coefficients		Standardised coefficients	<i>t</i>	<i>p</i>	<i>F</i>	<i>R</i>	<i>R</i> ²	ΔR^2
		B	SE	Beta						
1	(Constant)	1.68	0.20		8.32	0.00*	43.01	0.41	0.17	0.17
	Home support	0.52	0.07	0.36	7.87	0.00*				
	Home-related developmental opportunities	0.05	0.07	0.03	0.68	0.49				
	Home autonomy	0.11	0.08	0.07	1.45	0.15				
2	(Constant)	1.04	0.23		4.57	0.00*	25.29	0.47	0.22	0.21
	Home support	0.40	0.07	0.27	5.79	0.00*				
	Home-related developmental opportunities	0.04	0.07	0.03	0.54	0.59				
	Home autonomy	0.08	0.07	0.05	1.07	0.28				
	Family-work perspectives	-0.06	0.10	-0.04	-0.57	0.57				
	Family-work affect	0.27	0.10	0.18	2.71	0.01*				
	Family-work time management	0.16	0.08	0.12	2.07	0.04				

Table 11 continues

Family-work socio-capital	0.00	0.10	0.00	0.03	0.97
---------------------------	------	------	------	------	------

* $p < 0.05$

Table 11 summarises the regression analysis done with home resources and FWE as predictors of life satisfaction. Entry of the home resources (home support, home-related developmental opportunities and home autonomy) in the first step, produced a statistically significant model ($F_{(3,623)} = 43.01$; $p = 0.00$) accounting for 17% of the total variance. More specifically, it appears that home support ($\beta = 0.36$; $t = 7.87$; $p \leq 0.05$) predicts life satisfaction. When FWE dimensions were added into the second step of the regression analysis, a statistically significant model were produced ($F_{(7,619)} = 25.29$; $p = 0.00$; $\Delta R^2 = 0.21$) accounting for 22% of the total variance. It was shown that family-work affect ($\beta = 0.18$; $t = 2.71$; $p \leq 0.05$) is a significant predictor of life satisfaction.

From the results above partial acceptance is provided for hypothesis 10, which means that numerous home resources and dimensions of FWE significantly predict life satisfaction.

The results of a multiple regression analysis done with family satisfaction as dependent variable are projected in Table 12. Home support, home-related developmental opportunities and home autonomy were entered in the first step and FWE dimensions in the second step.

Table 12

Multiple regression analysis with family satisfaction as dependent variable

Model		Unstandardised coefficients		Standardised coefficients	t	p	F	R	R^2	ΔR^2
		B	SE	Beta						
1	(Constant)	2.08	0.18		11.89	0.00*	69.26	0.50	0.25	0.25
	Home support	0.63	0.06	0.47	11.01	0.00*				
	Home-related developmental opportunities	0.04	0.06	0.03	0.60	0.55				
	Home autonomy	0.03	0.07	0.02	0.47	0.64				

Table 12 continues

Model		Unstandardised coefficients		Standardised coefficients	<i>t</i>	<i>p</i>	<i>F</i>	<i>R</i>	<i>R</i> ²	ΔR^2
		B	SE	Beta						
2	(Constant)	1.53	0.20		7.78	0.00*	37.07	0.54	0.30	0.29
	Home support	0.52	0.06	0.39	8.69	0.00*				
	Home-related developmental opportunities	0.03	0.06	0.03	0.60	0.55				
	Home autonomy	0.01	0.06	0.01	0.21	0.83				
	Family-work perspectives	-0.02	0.08	-0.08	-0.29	0.77				
	Family-work affect	0.35	0.09	0.25	4.09	0.00*				
	Family-work time management	-0.03	0.07	-0.02	-0.46	0.65				
	Family-work socio-capital	0.01	0.09	0.01	0.15	0.89				

* $p < 0.05$

Table 12 summarises the regression analysis done with home resources and FWE as predictors of family satisfaction as dependent variable. Entries of home support, home-related developmental opportunities and home autonomy in the first step, produced a statistically significant model ($F_{(3,623)} = 69.26$; $p = 0.00$) accounting for 25% of the total variance. More specifically, it appears that home support ($\beta = 0.47$; $t = 11.01$; $p \leq 0.05$) predicts family satisfaction. When FWE dimensions were added in the second step of the regression analysis, a statistically significant model were produced ($F_{(7,619)} = 37.07$; $p = 0.00$; $\Delta R^2 = 0.29$) accounting for 30% of the total variance. It was shown that family-work affect ($\beta = 0.25$; $t = 4.09$; $p \leq 0.05$) is a significant predictor of family satisfaction.

From the results above, partial acceptance is provided for hypothesis 11, which means that numerous home resources and dimensions of FWE significantly predict family satisfaction.

Discussion

Outline of the results

The general objective of this study was to determine the relationship between work and home resources, WFE, FEW, engagement and satisfaction among employees in the South African context.

The study investigated hypothesis 1 (work resources, WFE dimensions, work engagement, job satisfaction and career satisfaction are significantly related) and hypothesis 2 (home resources, FWE dimensions, family engagement, life satisfaction and family satisfaction are significantly related). In answering these hypotheses the results indicated that the four WFE dimensions are related to various work resources and work engagement dimensions, as well as to job satisfaction and career satisfaction. More specifically, work-related developmental opportunities and work autonomy were related to work-family perspectives, work-family affect and work-family time-management. Possible reason might be that if employees' work allows them the opportunity to develop themselves (e.g. through training and development), it may lead to the acquisition of new skills, concepts, or attitudes, emotional benefits and skills in time management. These in turn are energy resources that promote gains in the work domain and also benefit the employees' functioning within the family environment. Voydanoff (2004) found that self-reported learning opportunities on the job were associated with more WFE. Furthermore, if employees experience that they have control over their own projects at work and make the decisions on their own projects, they may learn new skills, also how to manage their time sufficiently and feel content about being in control of their own assignments. Their family may benefit from this condition, as it may help employees attend to family matters when necessary.

Work support was related to work-family affect and work-family socio-capital. This may indicate that having supportive co-workers or supervisors may help employees to deal with issues related to the family environment. As a result, these employees show support to their family members, and know that there is support at work as well. This condition may generate

feelings of contentment in the person, which also carries over and enhances his/her functioning in the family role. According to Frone, Yardley and Markel (1997), support gained at work from co-workers and supervisors is a resource that can improve performance and increase well-being in the employees' family role. These studies on WFE with antecedents are in line with previous studies (Baral & Bhargava, 2011; Bhargava & Baral, 2009; Carlson *et al.*, 2006; Cinamon & Rich, 2010; Grzywacz & Butler, 2005; Hakanen *et al.*, 2011; Karimi & Nouri, 2009; Siu *et al.*, 2010; Taylor *et al.*, 2009; Van Steenbergen *et al.*, 2009; Wadsworth & Owens, 2007).

Focusing on outcomes related to the various WFE dimensions, the results indicated that work dedication was related to work-family perspectives, work-family affect and work-family time management. A plausible explanation may be that resources acquired at work (e.g. skills, self-esteem, time management) may result in improved performance at work (i.e. managing one's time to finish work before deadlines). This state of affairs can create more positive affect at work, which ultimately translates into more positive affect in the family domain and more time spent within the family domain. This in turn may lead to higher dedication towards the employees' work. Work vigour was related to work-family perspectives and work-family affect. A plausible explanation may be that if employees acquire more resources from work (i.e. learning new skills or values from other colleagues), it may improve their functioning at work, which might generate positive feelings in the work. This condition ultimately may transfer to more positive feelings in the family domain. In turn this may lead to higher vigour in employees work, seeing that they have a desire to be more engaged because of their positive feelings and the acquisition of new skills.

Job satisfaction and career satisfaction were related to work-family perspectives, work-family affect and work-family time management. It is likely that resources acquired at work (e.g. self-esteem, time management) may result in improved performance at work, which has the effect of creating more positive affect at work, ultimately transferring to more positive affect in the family domain and in turn leading to higher job satisfaction. This finding is supported by Jaga and Bagraim (2011).

Furthermore, the findings mentioned above may also suggest that employees who experience WFE (i.e. gaining new skills or perspectives from work, managing their time sufficiently) may deliver improved job performance, which has the effect of creating more positive affect at work. This condition ultimately transfers to more positive affect in the family domain, enabling those employees to experience a stronger sense of career satisfaction. Such employees may be more satisfied with the success they have achieved in their careers, which in turn benefits their family life. This finding is supported by Gordon *et al.* (2007) as well as Jaga and Bagraim (2011). These results are in accordance with previous research related to outcomes and WFE (Balmforth & Gardner, 2006; Bhargava & Baral, 2009; Boyar & Mosley, 2007; Carlson *et al.*, 2006; Carlson *et al.*, 2009; Carlson *et al.*, 2010; Carlson *et al.*, 2011; Gordon *et al.*, 2007; Hanson *et al.*, 2006; Hill, 2005; Jaga & Bagraim, 2011; Karatepe & Kilic, 2009; Lourel *et al.*, 2009; Lu *et al.*, 2009; Masuda *et al.*, 2012; McNall *et al.*, 2010; Van Steenbergen *et al.*, 2007; Voydanoff, 2005; Wayne *et al.*, 2004; Wayne *et al.*, 2006).

Regarding the dimensions of FWE, it was indicated that all four dimensions related to various home resources and family engagement dimensions, as well as to life satisfaction and family satisfaction. More specifically, home support was related to all four FWE dimensions. This indicates that employees experience enrichment between their family and work lives when they do enjoy enough support from home. Support obtained from the home domain, such as encouragement, information, help and advice, may be used to improve those employees' functioning in the work role, and thus suggesting family-to-work enrichment. These findings are in line with previous research (Aryee *et al.*, 2005; Karatepe & Bekteshi, 2008). Furthermore, home-related developmental opportunities were related to family-work perspectives. This suggests that if employees are provided the opportunities at home to develop themselves, it may promote the acquisition of skills or values from the family role that might be beneficial in the work role, thus enhancing the work environment. These studies on FWE with antecedents are in line with previous studies (Aryee *et al.*, 2005; Baral & Bhargava, 2011; Bhargava & Baral, 2009; Carlson *et al.*, 2006; Cinamon & Rich, 2010; Karatepe & Bekteshi, 2008; Lu *et al.*, 2009; Siu *et al.*, 2010; Van Steenbergen *et al.*, 2009; Wadsworth & Owens, 2007).

When the outcomes and dimensions of FWE are taken into account, results show that life satisfaction was related to all four FWE dimensions. This may show that if employees perceive that the resources they have gained in their family life (e.g. gaining new ideas and skills, feeling positive, managing their time sufficiently and receiving support from family members) are beneficial to their career, they may in turn experience higher levels of satisfaction in their life as well as in their family life (Holbrook, 2005). Family vigour and family dedication were related to family-work affect and family-work socio-capital. It may be proposed that if employees receive the support they need from their family members, this could generate feelings of positive affect. This state of mind may be transferred to these employees' workplace and help improve their work performance. This in turn may enable them to feel more energised in their family domain and also more dedicated to their work, as they receive the appropriate support needed for their work domain. Furthermore, results showed that family satisfaction was related to family-work perspectives, family-work affect and family-work socio-capital. These results are in accordance with previous research on outcomes and FWE (Bhargava & Baral, 2009; Boyar & Mosley, 2007; Carlson *et al.*, 2006; Carlson *et al.*, 2009; Gareis *et al.*, 2009; Haar & Bardoel, 2008; Hanson *et al.*, 2006; Hill, 2005; Hunter *et al.*, 2010; Jaga & Bagraim, 2011; Lu *et al.*, 2009; Wayne *et al.*, 2004).

The relationships between various dimensions were investigated, such as between work resources, home resources, work engagement, family engagement, job satisfaction, career satisfaction, life satisfaction and family satisfaction. On closer inspection, results revealed that significant relationships did exist. More specifically, the results indicated that work vigour were practically significantly related (with a medium effect) to all three work resources. Furthermore, work dedication were practically significantly related (with a medium effect) to work support and work autonomy, and also related to work-related development opportunities (with a large effect). The reason may be that work resources such as work support, work-related development opportunities and work autonomy, may play a dual motivational role. It may either be an intrinsic role by fostering the employee's growth, learning and development, or an extrinsic role by being instrumental in helping employees achieve work goals, which result in increased engagement in their work (Demerouti *et al.*, 2001). Previous studies have consistently shown that work resources such as social support from colleagues and supervisors, autonomy, and learning

opportunities, are associated positively with work engagement (Rothmann & Jordaan, 2006; Schaufeli & Salanova, 2007).

Job satisfaction were practically significantly related (with a medium effect) to all three work resources. Career satisfaction was practically significantly related to work-related development opportunities (with a large effect) and to work autonomy (with a medium effect). These findings may suggest that if employees experience work resources such as work support, work-related developmental opportunities (i.e. the opportunity to develop strong points and to acquire new skills) and work autonomy (i.e. freedom in carrying out own work activities, freedom in deciding the time spent on a task), this could have a positive impact on their work. Such employees may feel more satisfied with the goals they have achieved at their work and overall in their career. As a result, work support, work-related developmental opportunities and work autonomy are three important resources that may help employees to feel satisfied in their jobs and career. According to Schaufeli, Bakker and Rhenen (2009), it may be assumed that employees who are surrounded by innovative work resources are more likely to experience a general feeling of psychological freedom (i.e. autonomy), interpersonal connectedness (i.e. belongingness), and effectiveness (i.e. competence), which in turn explains why they feel more satisfied in their job or career.

Family vigour, family absorption and family dedication were all practically significantly related (with a medium effect) to home support. This may be because supportive family members increase the likelihood that employees could be successful in achieving their goals in their family life. Thus the outcome is positive and engagement in the family life is likely to occur. Furthermore, life satisfaction was practically significantly related (with a medium effect) to home support. Family satisfaction was practically significantly related (with a medium effect) to home support and home-related development opportunities. From the results mentioned above it may be suggested that individuals, who experience support from their family members and have the opportunity to learn new skills and grow in their family life, may experience this home support. They may feel that their wants and needs are met and that they achieve their goals in their family life. This creates a general feeling of fulfilment in both their family and life in general, and thus leads to the experience of life satisfaction as well as family satisfaction.

The results fully supported hypotheses 8 and 9. This was done by findings that work resources such as work-related developmental opportunities and work autonomy, significantly predicted high levels of both job satisfaction and career satisfaction. When investigating the four WFE dimensions, results indicated that work-family perspectives as well as work-family affect were seen as significant predictors of high levels of both job satisfaction and career satisfaction. This may be because employees who have resources such as autonomy and developmental opportunities in their work, gain new skills, perspectives and values. This gives them greater satisfaction in their work and career situation and thus, employees may feel more content with the progress towards the goals they have set in their work life. The positive emotions that employees experience as a result, as well as the positive attitudes they gain from their work situation, may help to improve their self-esteem and confidence in their family life, and hence increase their performance within the family domain. In turn, this experience increases the positive energy that employees transfer to the work domain. These findings are consistent with previous research (Aryee *et al.*, 2005; Balmforth & Gardner, 2006; Boyar & Mosley, 2007; Carlson *et al.*, 2006; Jaga & Bagraim, 2011; Van Steenbergen *et al.*, 2007; Wayne *et al.*, 2004).

Furthermore, work-family socio-capital significantly predicted lower levels of job satisfaction. An explanation can be that employees may gain support from their work by their supervisor or colleagues, if a crisis occurs in the family. However this support may only be limited to family matters (e.g. family crisis) and thus the support gained does not in turn help the employee to achieve goals in their work place. As a result, the satisfaction to achieve the goal to be successful in their work environment is lower. These findings are consistent with previous research (Aryee *et al.*, 2005; Balmforth & Gardner, 2006; Boyar & Mosley, 2007; Carlson *et al.*, 2006; Jaga & Bagraim, 2011; Van Steenbergen *et al.*, 2007; Wayne *et al.*, 2004).

When giving full evidence for hypotheses 10 and 11 on the outcomes of family satisfaction and life satisfaction, it was found that family support is a significant predictor of higher levels for both outcomes. In addition, family-work affect was seen as a significant predictor of high levels of both family satisfaction and life satisfaction. This suggests that employees may have support at home that make them more satisfied with their family situation. Such a state of affairs leads to positive emotions (e.g. happiness) that in turn increase employees' confidence and improve the

performance in their work domain. This is because these employees have the guarantee of support at home if issues arise at work (e.g. job crises). Because of this knowledge and certainty, the employees experience satisfaction in their family and overall satisfaction in their lives. These findings are consistent with those of Boyar and Mosley (2007). Carlson *et al.* (2006) found that all dimensions (development, affect and efficiency) were related to family satisfaction. Jaga and Bagraim (2011) also reported that family-work affect predicted family satisfaction.

In answer to hypotheses 3 and 4, the results indicated that work-related developmental opportunities and work autonomy were the two work resources that significantly predicted all the work engagement dimensions (e.g. work dedication and work vigour). Regarding the relationship between the four WFE dimensions, the results showed that work-family affect significantly predicted work dedication as well as work vigour. Furthermore, it was shown that work-family perspectives significantly predicted work dedication. Based on these results, it appears that employees who have work resources such as developmental opportunities (i.e. the opportunity to develop strong points and to learn new things) and autonomy in their work (i.e. the freedom in carrying out own work activities, freedom in deciding the time spent on a task) are more content. Employees may feel happy about this condition, which in turn improves their family life as they may use the new skills, perspectives or values obtained at work to enhance their family domain. In turn, this experience increases the positive energy in employees' work domain. This experience makes employees more dedicated to their work because of the opportunities (e.g. to learn new skills or perspectives) at work, which make them feel happy and create positive emotions that lead to work vigour.

To date, relatively little research has been done on the relationship between work resources, WFE and work engagement. However, few studies for example, did indicate the mediation relationship. Siu *et al.* (2010) found that work engagement mediates the relationship between supervisor support and job autonomy and WFE. It has also been found that WFE can predict work engagement (Hakanen *et al.*, 2011).

Indicating full support for hypotheses 5, 6 and 7, the results found that the resource, family support, significantly predicted a higher level of all three family engagement dimensions (i.e.

family vigour, family dedication and family absorption). Family-work affect significantly predicted higher levels of all three dimensions of family engagement (i.e. family vigour, family dedication and family absorption). This suggests that employees who experience support from their family may be more engaged in their current family situation and thus experience positive emotions. These positive emotions and support that employees gain in their home environment may improve their self-worth and self-esteem. In turn this may improve their performance in their work domain, and thus transfer positive energy back to their family lives (Wadsworth & Owens, 2007), which also lead to closer family engagement.

Furthermore, the findings of the study indicated that family-work perspectives predicted a significant high level of family vigour. This may imply that employees receive certain perspectives, skills or values in their family life which they could apply to their work domain. If these new perspectives, skills or values are helpful in employees' work domain they will hold on to these resources and thereby experience vigour within their family and the motivation to utilise the resources even more. No research has been done as of yet on the association of FWE with family engagement.

Practical implications

The findings of the present study have expanded the existing body of knowledge on work-family enrichment, by providing evidence for associations between work resources, home resources, work-family enrichment and relevant outcomes. Organisations can identify antecedents and outcomes related to this type of enrichment, which will enable them to create policies and intervention plans which could benefit employees. The findings indicated that involvement in the family role does benefit employees at work (e.g. involvement in the family may provide opportunities to acquire skills or knowledge). Therefore policies and practices that are family-friendly should be implemented in organisations. Furthermore, experiences of work-family enrichment have beneficial effects in the work environment. Such benefits may include increased job satisfaction, career satisfaction and increased engagement; therefore organisations should create a culture to encourage experiences of work-family enrichment.

Limitations and recommendations

Although this research provided some valuable findings, it is also necessary to note the limitations of the current study. The first limitation was the use of a cross-sectional design, which meant that casual relationships could not be determined among variables. Researchers should examine the work-family process over time by employing longitudinal designs (Montgomery, Peeters, Schaufeli, & Den Ouden, 2003). The second limitation was that self-reported questionnaires were used to reach the research objectives and this raises the concern for methodological bias (Oosthuizen, 2005). The third limitation was that the study sample is dominated by females and employees speaking a Western Germanic (Afrikaans and English) language, which made it difficult to generalise the findings to males and other language groups. The fourth limitation is that the study only included a few work resources, home resources and outcomes that are associated with work-family enrichment. In future research a broader range of work resources, home resources and outcomes should be used, as it will improve the understanding of the relationship between various other work resources, home resources and outcomes. It is also important to recognise the possibility that specific work resources, home resources and outcomes may differ across organisations.

Notwithstanding the limitations, some recommendations can be made from this study. Future studies should include other antecedents and outcome variables for a clearer picture of the complex relationship between work and family. Future research should also include more organisations to generalise the findings sufficiently. Organisations should consider work-related activities, policies and practices that facilitate work-family enrichment so that they can benefit from the positive outcomes which their employees experience (Hammer, Cullen, Neal, Sinclair, & Shafiro, 2005). It is also recommended that longitudinal research designs are used in work-family enrichment research, because levels of this type of enrichment undoubtedly fluctuate over time for different people.

Conclusion

In conclusion, results support the idea that participation in one role may enrich the quality of life in the other role. Furthermore, the findings of the research showed that dimensions of WFE and FWE are associated with work resources, home resources and outcome variables such as the following: job satisfaction, career satisfaction, life satisfaction, family satisfaction, work engagement and family engagement. Therefore this study provides information on the relationship between antecedents and outcomes associated with work-family enrichment. It further provides a more comprehensive understanding of the positive side of the work/family interface.

References

- Arbuckle, J. L. (2011). *Amos Development Company. Amos 20.0* Copyright 1983-2008. NET Framework Version 1.1
- Aryee, S., Srinivas, E. S., & Tan, H. H. (2005). Rhythms of life: Antecedents and outcomes of work-family balance in employed parents. *Journal of Applied Psychology, 90*, 132-146.
- Bakker, A. B., Demerouti, E., & Euwema, M. C. (2005). Job resources buffer the impact of job-demands on burnout. *Journal of Occupational Health Psychology, 10*(2), 170-180.
- Bakker, A. B., Demerouti, E., & Verbeke, W. (2004). Using the job demands-resources model to predict burnout and performance. *Human Resource Management, 43*, 83-104.
- Bakker, A. B., & Leiter, M. P. (Eds.). (2010). *Work engagement: A handbook of essential theory and research*. New York, NY: Psychology Press.
- Balmforth, K., & Gardner, D. (2006). Conflict and facilitation between work and family: Realizing the outcomes for organizations. *New Zealand Journal of Psychology, 35*(2), 69-76.
- Baral, R., & Bhargava, S. (2011). Examining the moderating influence of gender on the relationships between work-family antecedents and work-family enrichment. *Gender in Management: An International Journal, 26*, 122-147.
- Barnett, R. C. (1998). Toward a review and reconceptualization of the work/family literature. *Genetic, Social and General Psychology Monographs, 124*, 125-182.
- Barnett, R. C., & Hyde, J. S. (2001). Women, men, work, and family: An expansionist theory. *American Psychologist, 56*, 781-796.
- Bhargava, S., & Baral, R. (2009). Antecedents and consequences of work-family enrichment among Indian managers. *Psychological Studies, 54*, 213-225.
- Bentler, P. M. (1990). Comparative fit indexes in structural equation models. *Psychological Bulletin, 107*, 238-246.
- Blaikie, N. W. H. (2003). *Analyzing quantitative data: From description to explanation*. Thousand Oaks, CA: Sage.
- Boyar, S. L., & Mosley, D. C. (2007). The relationship between core self-evaluations and work and family satisfaction: The mediating role of work-family conflict and facilitation. *Journal of Vocational Behavior, 71*, 265-281.

- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen, & J. S. Long (Eds.), *Testing structural equation models* (pp. 136-162). Newbury Park, CA: Sage.
- Carlson, D. S., Grzywacz, J. G., & Kacmar, K. M. (2010). The relationship of schedule flexibility and outcomes via the work-family interface. *Journal of Managerial Psychology*, 25, 330-355.
- Carlson, D. S., Grzywacz, J. G., & Zivnuska, S. (2009). Is work-family balance more than conflict and enrichment? *Human Relations*, 62, 1 459-1 486.
- Carlson, D. S., Kacmar, K. M., Wayne, J. H., & Grzywacz, J. G. (2006). Measuring the positive side of the work-family interface: Development and validation of a work-family enrichment scale. *Journal of Vocational Behavior*, 68, 131-164.
- Carlson, D., Zivnuska, S., Kacmar, K. M., Ferguson, M., & Whitten, D. (2011). Work-family enrichment and job performance: A constructive replication of affective events theory. *Journal of Occupational Health Psychology*, 16, 297-312.
- Cinamon, R. G., & Rich, Y. (2010). Work family relations: Antecedents and outcomes. *Journal of Career Assessment*, 18, 59-70.
- Coetzee, M., Bergh, Z., & Schreuder, D. (2010). The influence of career orientations on subjective work experiences. *South African Journal of Human Resource Management*, 8(1), 1-13. doi: 10.4102/sajhrm.v8i1.279
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Orlando, CA: Academic Press.
- De Klerk, M., Nel, J. A., Hill, C., & Koekemoer, E. (2013). The development of the MACE Work-Family Enrichment Instrument. *South African Journal of Industrial Psychology*, 39(2), 1-16.
- Demerouti E., Bakker, A. B., Nachreiner, F. & Schaufeli, W. B. (2001). The Job Demands - Resources model of burnout. *Journal of Applied Psychology*, 86, 499-512.
- Demerouti, E., Bakker, A. B., & Voydanoff, P. (2009). Does home life interfere with or facilitate job performance? *European Journal of Work and Organisational Psychology*, 19(2), 128-149.
- Diener, E. D., Emmons, R. A., Larson, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, 49, 71-75.

- Dyson-Washington, F. (2006). *The relationship between optimism and work-family enrichment and their influence on psychological well-being* (Unpublished doctoral thesis). Drexel University, Philadelphia, PA, United States of America.
- Friedman, S. D., & Greenhaus, J. H. (2000). *Work and family – allies or enemies? What happens when business professionals confront life choices*. New York, NY: Oxford University Press.
- Frone, M. R. (2003). Work-family balance. In J. C. Quick, & L. E. Tetrick (Eds.), *Handbook of occupational health psychology* (pp. 143-162). Washington, DC: American Psychological Association.
- Frone, M. R., & Rice, R. W. (1987). Work-family conflict: The effect of job and family involvement. *Journal of Occupational Behavior, 11*, 79-96.
- Frone, M. R., Russell, M., & Cooper, M. L. (1992). Antecedents and outcomes of work-family conflict: Testing a model of the work-family interface. *Journal of Applied Psychology, 77*, 65-78.
- Frone, M. R., Yardley, J. K., & Markel, K. S. (1997). Developing and testing an integrative model of the work-to-family interface. *Journal of Vocational Behavior, 50*(2), 145-167.
- Gareis, K. C., Barnett, R. C., Ertel, K. A., & Berkman, L. F. (2009). Work-family enrichment and conflict: Additive effects, buffering, or balance? *Journal of Marriage and Family, 71*, 696-707.
- Gordon, J. R., Whelan-Berry, K. S., & Hamilton, E. H. (2007). The relationship among work-family conflict and enhancement, organizational work-family culture, and work outcomes for older working women. *Journal of Occupational Health Psychology, 12*, 350-364.
- Greenhaus, J. H., Parasuraman, S., & Wormley, W. M. (1990). Effects of race on organizational experiences, job performance evaluations, and career outcomes. *Academy of Management Journal, 33*, 64-86.
- Greenhaus, J. H., & Powell, G. N. (2006). When work and families are allies: A theory of work-family enrichment. *Academy of Management Review, 31*(1), 72-92.
- Grzywacz, J. G., & Butler, A. B. (2005). The impact of job characteristics on work-to-family facilitation: Testing a theory and distinguishing a construct. *Journal of Occupational Health Psychology, 10*, 97-109.
- Grzywacz, J. G., & Marks, N. F. (2000). Re-conceptualizing the work-family interface: An ecological perspective on the correlates of positive and negative spillover between work and family. *Journal of Occupational Health Psychology, 5*, 111-126.

- Haar, J. M., & Bardoel, E. A. (2008). Positive spillover from the work-family interface: A study of Australian employees. *Asia Pacific Journal of Human Resource, 46*, 275-287.
- Hackman, J. R., & Oldham, G. R. (1976). Motivation through the design of work: Test of a theory. *Organizational Behavior and Human Performance, 16*, 250-279.
- Hakanen, J. J., Peeters, M. C. W., & Perhoniemi, R. (2011). Enrichment processes and gain spirals at work and at home: A 3-year cross-lagged panel study. *Journal of Occupational and Organizational Psychology, 84*, 8-30.
- Hammer, L. B., Cullen, J. C., Neal, M. B., Sinclair, R. R., & Shafiro, M. V. (2005). The longitudinal effects of work-family conflict and positive spillover on depressed symptoms among dual-earner couples. *Journal of Occupational Health Psychology, 10*(2), 138-154.
- Hanson, G. C., Hammer, L. B., & Colton, C. L. (2006). Development and validation of a multidimensional scale of perceived work-family positive spillover. *Journal of Occupational Health Psychology, 11*(3), 249-265.
- Hellgren, J., Sjöberg, A., & Sverke, M. (1997). Intention to quit: Effects of job satisfaction and job perceptions. In F. Avallone, J. Arnold, & K. de Witte (Eds.), *Feelings work in Europe* (pp. 415-423). Milano, Italy: Guerini.
- Hill, E. J. (2005). Work-family facilitation and conflict, working fathers and mothers, work-family stressors and support. *Journal of Family Issues, 26*(6), 793-819.
- Holbrook, S. K. (2005). *Development and initial validation of the work-family facilitation scale* (Unpublished doctoral thesis). University of South Florida, Florida, United States of America.
- Hunter, E. M., Perry, S. J., Carlson, D. S., & Smith, S. A. (2010). Linking team resources to work-family enrichment and satisfaction. *Journal of Vocational Behavior, 77*, 304-312.
- Jaga, A., & Bagraim, J. (2011). The relationship between work-family enrichment and work-family satisfaction outcomes. *South African Journal of Psychology, 41*(1), 52-62.
- Karatepe, O. M., & Bektashi, L. (2008). Antecedents and outcomes of work-family facilitation and family-work facilitation among frontline hotel employees. *International Journal of Hospitality Management, 27*, 517-528.
- Karatepe, O. M., & Kilic, H. (2009). The effects of two directions of conflict and facilitation on frontline employees' job outcomes. *The Service Industries Journal, 29*, 977-993.

- Karimi, L., & Nouri, A. (2009). Do work demands and resources predict work-to-family conflict and facilitation? A study of Iranian male employees. *Journal of Family and Economic Issues*, 30, 193-202.
- Koekemoer, E., & Mostert, K. (2010). Work-nonwork interference: Preliminary results on the psychometric properties of a new instrument. *South African Journal of Industrial Psychology*, 36(1), 1-13.
- Lourel, M., Ford, M. T., Gamassou, C. E., Gueguen, N., & Hartmann, A. (2009). Negative and positive spillover between work and home. *Journal of Managerial Psychology*, 24, 438-449.
- Lu, J. F., Siu, O. L., Spector, P. E., & Shi, K. (2009). Antecedents and outcomes of a fourfold taxonomy of work-family balance in Chinese employed parents. *Journal of Occupational Health Psychology*, 14, 182-192.
- Marks, S. R. (1977). Multiple roles and role strain: Some notes on human energy, time and commitment. *American Sociological Review*, 42, 921-936.
- Maslach, C. (2003). Job burnout: New directions in research and intervention. *Current Directions in Psychological Science* 12(5), 189-192.
- Maslach, C. & Leiter, M. P. (1997). *The truth about burnout: How organizations cause personal stress and what to do about it*. San Francisco, CA: Jossey-Bass.
- Masuda, A. D., McNall, L. A., Allen, T. D., & Nicklin, J. M. (2012). Examining the constructs of work-to-family enrichment and positive spillover. *Journal of Vocational Behavior*, 80, 197-210.
- McNall, L. A., Masuda, A. A., & Nicklin, J. M. (2010). Flexible work arrangements, job satisfaction, and turnover intentions: The mediating role of work-to-family enrichment. *Journal of Psychology*, 144, 61-81.
- McNall, L. A., Nicklin, J. M., & Masuda, A. A. (2010). A Meta-analytical review of the consequences associated with work-family enrichment. *Journal of Business and Psychology*, 25, 381-396.
- Montgomery, A. J., Peeters, M. C. W., Schaufeli, W. B., & Den Ouden, M. (2003). Work-home interference among newspaper managers: Its relationship with burnout and engagement. *Anxiety, Stress & Coping*, 16, 195-211.
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York, NY: McGraw-Hill.

- Oosthuizen, B. (2005). *Job characteristics, coping and work-home interaction in a nursing environment* (Unpublished master's dissertation), North-West University, Potchefstroom, South Africa.
- Paoli, P. (1997). *Second European survey on working conditions 1997. European Foundation for the Improvement of Living and Working Conditions*. Dublin, Ireland: Loughlingston House.
- Parasuraman, S., Greenhaus, J. H., & Granrose, C. S. (1992). Role stressors, social support, and well-being among two-career couples. *Journal of Organizational Behavior*, 13 (4), 339-356.
- Parasuraman, S., Purohit, Y. S., Godshalk, V. M., & Beutell, N. J. (1996). Work and family variables, entrepreneurial career success, and psychological well-being. *Journal of Vocational Behavior*, 48, 275-300.
- Polach, J. (2003). HRD's role in work-life integration issues: Moving the workforce to a change in mindset. *Human Resource Development International*, 6(1), 57-68.
- Rashid, W. E. W., Nordin, M. S., Omar, A., & Ismail, I. (2011a). Social support, work-family enrichment and life satisfaction among married nurses in health service. *International Journal of Social Science and Humanity*, 1(2), 150-155.
- Rashid, W. E. W., Nordin, M. S., Omar, A., & Ismail, I. (2011b). Measuring self-esteem, work/family enrichment and life satisfaction: An empirical validation. *International Conference on Sociality and Economics Development*, 10, 576-581.
- Rothmann, S., & Jordaan, G. M. E. (2006). Job demands, job resources, and work engagement of academic staff in South African higher education institutions. *South African Journal of Industrial Psychology*, 32(4), 87-96.
- Schaufeli, W. B., Bakker, A. B., & Rhenen, W. V. (2009). How changes in job demands and resources predict burnout, work engagement, and sickness absenteeism. *Journal of Organizational Behavior*, 30, 893-917
- Schaufeli, W. B., & Salanova, M. (2007). Work engagement: An emerging psychological concept and its implications for organizations. In S. W. Gilliland, D. D. Steiner, & D. P. Skarlicki (Eds.), *Research in social issues in management: Managing social and ethical issues in organizations* (Vol. 5) (pp. 135-177). Greenwich, CT: Information Age.
- Schaufeli, W. B., Salanova, M., Gonzalez-Roma, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A confirmative analytic approach. *Journal of Happiness Studies*, 3, 71-92.

- Schreuder, A. M. G., & Theron, A. L. (2001). *Careers: An organizational perspective*. Cape Town, South Africa: Juta.
- Sieber, S. D. (1974). Toward a theory of role accumulation. *American Sociological Review*, *39*, 567-578.
- Siu, O., Lu, J., Brough, P., Lu, C., Bakker, A. B., Kalliath, T., & Shi, K. (2010). Role resources and work-family enrichment: The role of work engagement. *Journal of Vocational Behavior*, *77*, 470-480.
- Steyn, H. S. (2002). Practically significant relationships between two variables. *South African Journal of Industrial Psychology*, *28*(3), 10-15.
- Stevens, D. P., Minnote, K. L., Mannon, S. E., & Kiger, G. (2007). Examining the neglected side of the work-family interface. *Journal of Family Issues*, *28*(2), 242-262.
- Storm, K. (2002). *Burnout and work engagement in the South African Police Service* (Unpublished doctoral thesis). Potchefstroom University for CHE, Potchefstroom, South Africa.
- Struwig, F. W., & Stead, G. B. (2001). *Planning, designing and reporting research*. Cape Town, South Africa: Pearson.
- Taylor, B. L., Delcampo, R. G., & Blancero, D. M. (2009). Work-family conflict/facilitation and the role of workplace supports for U.S. Hispanic professionals. *Journal of Organizational Behavior*, *30*, 643-664.
- Ten Brummelhuis, L. L., & Bakker, A. (2012). A resource perspective on the work-home interface. *American Psychologist*, *67*(7), 545-556.
- Tett, R. P., & Meyer, J. P. (1993). Job satisfaction, organizational commitment, turnover intention and turnover. Path analyser based on meta-analytical findings. *Personnel Psychology*, *46*, 259-293.
- Voydanoff, P. (2004). The effects of work demands and resources on work-to-family conflict and facilitation. *Journal of Marriage and Family*, *66*, 398-412.
- Voyandoff, P. (2005). The effects of community demands, resources, and strategies on the nature and consequences of the work-family interface: An agenda for future research. *Family Relations*, *54*, 583-595.
- Van Steenbergen, E. F., Ellemers, N., & Mooijaart, A. (2009). Combining work and family: How family supportive work environments and work supportive home environments can reduce

- work-family conflict and enhance facilitation. In D. R. Crane, & E. J. Hill (Eds.), *Handbook of families & work: Interdisciplinary perspectives* (pp. 279-300). New York, NY: University Press of America.
- Wadsworth, L. L., & Owens, B. P. (2007). The effects of social support on work-family enhancement and work-family conflict in the public sector. *Public Administration Review*, *67*, 75-87.
- Wayne, J. H., Grzywacz, J. G., Carlson, D. S., & Kacmar, K. M. (2007). Work-family facilitation: A theoretical explanation and model of primary antecedents and consequences. *Human Resource Management Review*, *17*, 63-76.
- Wayne, J. H., Musisca, N., & Fleeson, W. (2004). Considering the role of personality in the work-family experience: Relationships of the big five to work-family conflict and facilitation. *Journal of Vocational Behavior*, *64*, 108-130.
- Wayne, J. H., Randel, A. E., & Stevens, J. (2006). The role of identity and work-family support in work-family enrichment and its work-related consequences. *Journal of Vocational Behavior*, *69*, 445-461.

CHAPTER 6

Conclusions, limitations and recommendations

The purpose of this chapter is to draw conclusions from the four articles that form part of the present study. Conclusions are drawn in accordance with the specific research objectives of this study. In addition, limitations of the study are discussed followed by recommendations to organisations regarding the specific research problem. Lastly, suggestions and recommendations are made for future research.

6.1 Conclusions

Research on the positive side of the work/family interface has progressed considerably over the past few years. Within South Africa only a few studies (e.g. Jaga & Bagraim, 2011; Jaga, Bagraim, & Williams, 2013) has been done on the positive side of this interface. However there is no thorough understanding of how employees experience the enrichment between their work and family lives. Furthermore, existing measures on the positive side of the work/family interface have been developed with a lack of consistency in conceptualising the construct and without rigorous scale development and thorough validation procedures (Brockwood, Hammer, & Neal, 2003; Voydanoff, 2004). Consequently, such measurements suffer from poor reliability and validity and may not measure the construct of interest adequately. Within South Africa no proper reliable and valid measuring instrument is available to measure the positive side of the work/family interface. The present study attempted to address this deficiency. In the process, valuable contributions were made to the research on the positive side of the work/family interface.

The first objective of this study was to identify a theoretical framework as guidance for measurements of the positive side of the work/family interface; to conceptualise the identified framework and its components according to the literature; and to make recommendations toward development of a new instrument that could measure the positive side of the work/family interface adequately.

Existing literature conceptualises the positive work/family interface by using four different terms. Firstly, *work-family enhancement* refers to the acquisition of resources (i.e. role privileges, overall status security, resources for status enhancement and role performance, enrichment of the personality and ego gratification) and experiences that are beneficial for individuals in facing life challenges (Barnett, 1998; Barnett & Hyde, 2001; Greenhaus & Parasuraman, 1999; Ruderman, Ohlott, Panzer, & King, 2002; Sieber, 1974; Tiedje, Wortman, Downey, Emmons, Biernat, & Lang, 1990; Voydanoff, 2002). Secondly, *work-family positive spillover* denotes the transfer of personal gains (e.g. affect, skills, behaviours and values) from the originating domain to the receiving domain, thus having beneficial effects on the receiving domain, causing the two domains to be similar (Crouter, 1984; Edwards & Rothbard, 2000; Grzywacz & Marks, 2000; Hanson, Hammer, & Colton, 2006; Kirchmeyer, 1992a, 1992b; Stephens, Franks, & Atienza, 1997; Sumer & Knight, 2001). Thirdly, *work-family facilitation* implies the extent to which participation at work (or family) is made easier by virtue of the experiences, skills, and opportunities gained or developed in the family (or work) environment (Frone, 2003; Grzywacz, 2000). Fourthly, *work-family enrichment* refers to the transfer of resource gains from one role to the other and for improved performance to occur in the receiving domain (Greenhaus & Powell, 2006).

Given the latter definition of work-family enrichment, concepts such as work-family positive spillover and work-family facilitation generally can be categorised under the description of work-family enrichment (Hanson *et al.*, 2006). Furthermore, work-family enrichment is the only concept in the positive side of the work/family interface literature that has a conceptualised theoretical model, which has been developed properly (Greenhaus & Powell, 2006). Thus the present study consequently used this theoretical work-family enrichment model as a guideline for this study's objectives.

The proposed theoretical framework for work-family enrichment defines this type of enrichment as the "extent to which experiences in one role improve the quality of life in the other role" (Greenhaus & Powell, 2006, p. 73). It furthermore focuses on the generation and application of a wide range of resources (i.e. skills and perspectives, psychological and physical, social-capital,

flexibility and material) that are accumulated through participating in one role, and which may then be applied to the correlating role (Barnett & Hyde, 2001; Friedman & Greenhaus, 2000; Greenhaus & Powell, 2006). This may result in improved performance or positive affect in the latter role (Carlson, Kacmar, Wayne, & Grzywacz, 2006). These resources facilitate improved performance in the other role either directly (i.e. instrumental path) or indirectly (i.e. affective path).

Carlson *et al.* (2006) was the first researchers to develop a work-family enrichment scale, based on Greenhaus and Powell's (2006) conceptualisation of enrichment. Although they included a variety of resources in the initial development of their instrument, the result was that their instrument could measure only three dimensions (i.e. development, affect and capital) in the work-to-family direction and three dimensions (i.e. development, affect and efficiency) in the family-to-work direction. This made it difficult to understand the total spectrum of resources (i.e. skills and perspectives, psychological and physiological resources, social-capital resources, flexibility and material) that can be gained – as proposed by the theoretical model of Greenhaus and Powell (2006). Therefore it could be concluded that further development of a measuring instrument was needed for work-family enrichment, in order to expand the knowledge of the total resources gained between the work and family domains.

The second objective was to develop a more comprehensive measuring instrument for work-family enrichment that can assess all of the resources (i.e. skills and perspectives, psychological and physical, social-capital, flexibility and material resources) as identified by Greenhaus and Powell's (2006) theoretical model of work-family enrichment.

Following the procedures for scale development as prescribed in the literature (i.e. initial construct conceptualisation, item generation and item evaluation, item development and item refinement: DeVellis, 2003), the present study produced a new instrument, namely the MACE Work-Family Enrichment Instrument, which encompasses 95 items (51 items measuring work-to-family enrichment and 44 items measuring family-to-work enrichment).

The Rasch Uni-dimensional Measurement Model 2030 (RUMM 2030) programme (Andrich & Sheridan, 2009) were utilised to evaluate and eliminate all the poorly functioning items. Furthermore, the following methods were investigated: thresholds, item location and fit to the model, item/person threshold distribution, differential item functioning, local item dependence and item location and fit of the items to the sub-scales. The results of the investigation produced a 51-item measuring instrument. Therefore, 44 items were eliminated through this procedure. From the 51 items that were retained, 31 items measures the work-to-family enrichment direction and 20 items the family-to-work enrichment direction. It was also evident that most of the items measuring the dimension of material resources did not remain. Therefore, material resources as a dimension measured by the new instrument were disregarded. It was further established that a five-point scale did not yield adequate results. More specifically, the results indicated that a four-point Likert response scale ranging from 1 (*Disagree*) to 4 (*Strongly agree*) was seen as sufficient. It seems that participants found it challenging to distinguish *Strongly disagree* from *Disagree* as separate scales, therefore these two scales were merged.

The third objective was to determine the psychometric properties of the MACE Work-Family Enrichment Instrument.

This objective was achieved by exploring the internal validity (i.e. construct validity, discriminant validity and convergent validity), reliability as well as the external validity of the MACE Work-Family Enrichment Instrument. Using confirmatory factor analysis (CFA) the construct validity of the newly developed instrument was determined. Alternative models were tested and compared to the hypothesised four-factor models (excluding material resources as dimension) for each direction of enrichment (i.e. work-to-family and family-to-work). The results indicated that the four-factor model of work-to-family enrichment and family-to-work enrichment fitted the data significantly better compared to the alternative models that were tested (i.e. one-factor and three-factor models). The alternative models for both directions (work-to-family and family-to-work) were based on a general enrichment perspective from the literature (the one-factor model) and the three-factor alternative models were based on a perspective similar to the work-family enrichment scale of Carlson *et al.* (2006).

Regarding the discriminant validity of the four dimensions for work-to-family enrichment and family-to-work enrichment, the results of the confirmatory factor analysis (CFA) revealed that these dimensions in both directions were distinct. Therefore, it was shown that the MACE instrument did measure two directions (work to family vs. family to work). The results indicated that convergent validity did exist. Furthermore, the results revealed that acceptable Cronbach's alpha coefficients were obtained for all the dimensions of the newly developed MACE instrument in each direction (work-to-family and family-to-work). This suggested that the MACE instrument is reliable and can be used to measure enrichment between these two environments in which an employee operates.

The external validity of this study was determined (i.e. relationship with theoretically relevant antecedents and outcomes). The results indicated that the dimensions of the new instrument were related to antecedents such as work resources (work support, work-related developmental possibilities, work autonomy), home resources (i.e. home support, home-related developmental possibilities, home autonomy). It was also related to outcomes such as work engagement (i.e. work vigour, work dedication), family engagement (i.e. family vigour, family absorption, family dedication), job satisfaction, career satisfaction, life satisfaction and family satisfaction.

The fourth objective was to assess the relationship between various antecedents, work-family enrichment dimensions and outcomes among employees in the South African context.

Results indicated that the four dimensions for work-to-family enrichment are related to various antecedents (i.e. work resources, such as work support, work-related developmental opportunities and work autonomy), as well as outcomes (i.e. work engagement dimensions, job satisfaction and career satisfaction). These research results on work-to-family enrichment and its antecedents are in line with previous studies (Baral & Bhargava, 2011; Bhargava & Baral, 2009; Carlson *et al.*, 2006; Cinamon & Rich, 2010; Grzywacz & Butler, 2005; Hakanen, Peeters, & Perhoniemi, 2011; Karimi & Nouri, 2009; Siu *et al.*, 2010; Taylor, Delcampo, & Blancero, 2009; Van Steenbergen, Ellemers, & Mooijaart, 2009; Wadsworth & Owens, 2007), as well as research outcomes (Balmforth & Gardner, 2006; Bhargava & Baral, 2009; Boyar & Mosley, 2007; Carlson *et al.*, 2006; Carlson, Grzywacz, & Kacmar, 2010; Carlson, Grzywacz, & Zivnuska,

2009; Carlson, Zivnuska, Kacmar, Ferguson, & Whitten, 2011; Gordon, Whelan-Berry, & Hamilton, 2007; Hanson *et al.*, 2006; Hill, 2005; Jaga & Bagraim, 2011; Karatepe & Kilic, 2009; Lourel, Ford, Gamassou, Gueguen, & Hartmann, 2009; Lu, Siu, Spector, & Shi, 2009; Masuda, McNall, Allen, & Nicklin, 2012; McNall, Masuda, & Nicklin, 2010; Van Steenbergen *et al.*, 2007; Voydanoff, 2005; Wayne, Musisca, & Fleeson, 2004; Wayne, Randel, & Stevens, 2006).

The present study also indicated that all four family-to-work enrichment dimensions related to various antecedents (i.e. home resources such as; home support and home-related developmental opportunities). It also related to outcomes such as family engagement dimensions, life satisfaction and family satisfaction. These results regarding family-to-work enrichment and its antecedents are in line with previous studies (Aryee, Srinivas, & Tan, 2005; Baral & Bhargava, 2011; Bhargava & Baral, 2009; Carlson *et al.*, 2006; Cinamon & Rich, 2010; Karatepe & Bekteshi, 2008; Lu *et al.*, 2009; Siu *et al.*, 2010; Van Steenbergen *et al.*, 2009; Wadsworth & Owens, 2007), as well as research outcomes (Bhargava & Baral, 2009; Boyar & Mosley, 2007; Carlson *et al.*, 2006, 2009; Gareis, Barnett, Ertel, & Berkman, 2009; Haar & Bardoel, 2008; Hanson *et al.*, 2006; Hill, 2005; Hunter, Perry, Carlson, & Smith, 2010; Jaga & Bagraim, 2011; Lu *et al.*, 2009; Wayne *et al.*, 2004).

It could be concluded from this study that work-to-family enrichment dimensions are indeed predictors of career satisfaction, job satisfaction and work engagement. More specifically it was shown from the results that work-family perspectives as well as work-family affect was significant predictors of both job satisfaction and career satisfaction. Furthermore, work-family socio-capital significantly predicted lower levels of job satisfaction. Work-family affect significantly predicted high work dedication as well as work vigour; work-family perspectives significantly predicted work dedication. These findings are consistent with previous research (Aryee *et al.*, 2005; Balmforth & Gardner, 2006; Boyar & Mosley, 2007; Carlson *et al.*, 2006; Hakanen *et al.*, 2011; Jaga & Bagraim, 2011; Van Steenbergen *et al.*, 2007; Wayne *et al.*, 2004). On further investigation it can be concluded that dimensions of family-to-work enrichment are indeed predictors of family satisfaction, life satisfaction and family engagement dimensions (i.e. family vigour, family dedication and family absorption). More specifically, family-to-work dimensions were seen as a significant predictor of family satisfaction, life satisfaction and all

three family engagement dimensions (e.g. family vigour, family dedication and family absorption). Furthermore, family-work affect was shown to be a significant predictor of family satisfaction, life satisfaction and all three family engagement dimensions (e.g. family vigour, family dedication and family absorption). The findings of the present study also showed that family-work perspectives predicted a significant high level of family vigour. To date no research has been done on the association of family-to-work enrichment with family engagement, therefore the findings from this study contribute to the body of knowledge on the positive side of the work/family interface literature.

It is evident that the present study adds to existing literature on the positive side of the work/family interface, seeing that a new measuring instrument for work-family enrichment has been developed based on a sound theoretical framework. Furthermore, this measuring instrument contributes to the literature as it includes more resources gained from the reciprocal domains as described by Greenhaus and Powells' (2006) work-family enrichment model. There is also evidence for internal as well as external validity of the instrument. Through this measuring instrument employees' work-family enrichment experiences can be recognised. Therefore this study contributes to literature on the positive side of the work/family interface.

6.2 Limitations of this research

It is important to be cognisant of some limitations of this study. The first limitation was the use of cross-sectional designs during the pilot as well as the validation study. Because single data sources with cross-sectional designs were used during this study, problems of method variance were not determined and investigated (Spector, 2006). Nevertheless, some studies have indicated that common method variance is not as big a threat as might be anticipated. Some even regard this methodological concern as a myth (Dollard & Winefield, 1998; Semmer, Zapf & Grief, 1996; Spector, 2006; Wall, Jackson, Mullarkey, & Parker, 1996).

The second limitation has been that of method bias or again common method variance because the results from this study were obtained by using only self-reporting questionnaires. The use of such questionnaires has been a source of debate in literature on organisational psychology for

some time (e.g. Spector, 1994). This methodology has been criticised that it leads to artificially inflated correlations when psychological constructs are measured. According to Semmer *et al.* (1996) common-method variance is not that problematic.

The third limitation was that during the third and fourth phase of the study, the sample was mainly dominated by females and employees speaking a Western Germanic (Afrikaans and English) language, which made it difficult to generalise the findings to males and other languages. However, the samples were still diverse in terms of qualification, geographical areas and industries at which the employees worked. Thus the findings did provide a broader view on the sample's experience of work-family enrichment. Furthermore, measures were administered in English, as the participants were mainly speaking a Western Germanic (Afrikaans and English) language, restrictions could exist in the way the participants understood the questions.

The fourth limitation that came to the fore was the large number of items (95 items) that were initially included in the second phase of the study to measure the various sub-constructs of the MACE Work-Family Enrichment Instrument. Some of the participants did complain about the length of the questionnaire and that the items were too repetitive. This may have influenced the way in which participants responded to the items (e.g. by responding randomly). However, Rasch analysis was used to eliminate the random responses of participant to the items of the instrument.

Another limitation may be the use of only Rasch analysis to evaluate the items in the second phase of the study. Other statistical analysing techniques, such as exploratory or confirmatory factor analysis using AMOS, could have produced more significant results about the items of the instrument. However, according to Hendriks, Fyfe, Styles, Skinner and Merriman, (2012), Rasch analysis is considered an ideal statistical technique that allows questionnaires or scales to be modified by re-scoring or removing items. The number of items was reduced considerably during the second phase of study (i.e. item evaluation study). Nevertheless, the items of the MACE Work-Family Enrichment Instrument administered in the third evaluation phase of the study still included a large number of items (51 items). According to Netemeyer, Boles and

McMurrian, (1996) lengthy questionnaires can become problematic for respondents and do not always contribute to the psychometric properties.

The fifth limitation was during the fourth phase of this study, only a few work resources, home resources and outcomes associated with work-family enrichment were included. However, it is also important to recognise alternative work resources, home resources and outcomes associated with work-family enrichment as this may vary across organisations. Taking this into account will improve the understanding of the relationship between various other work resources, home resources, outcomes and work-family enrichment.

6.3 Recommendations

The following recommendations are made to the organisations as well as proposed for future research.

6.3.1 Recommendations for the organisation

Notwithstanding the limitations of this study, the present findings have important implications for organisations. Organisations should consider the significant positive associations of various work resources with work-to-family enrichment as well as with various work outcomes. Through such consideration organisations may enhance the quality of employees' work and family lives by redesigning jobs. Job-redesigning can be done by providing more support, autonomy, and developmental opportunities. Organisations should provide more support to their employees, for example implementing mentorship programmes to support employees or providing training to supervisors to deal better with work-life balance issues. Such knowledge will help supervisors to support and be sensitive toward their subordinates who manage multiple roles and to help promote an organisation culture that is supportive to employees' family life. Furthermore, decision-makers should create opportunities for employees to develop their skills, for example introducing monthly training sessions for departments which will benefit the employees in their type of work.

The management should also communicate the developmental opportunities which the organisations hold (i.e. training that will benefit employees in terms of promotion, or opportunities for further studies). Furthermore, organisations should provide their employees with the opportunity to be more creative and innovative in their work and allow them to make their own decisions about assignments. If organisations do attend to these resources and make the resources available for their employees it can motivate the employees and make them feel competent in their work (Oosthuizen, 2011). This condition will also have a positive impact on the employees' family life, which will ultimately enrich their quality of life. By enhancing the level of work-to-family enrichment the organisations' efforts to introduce any kind of intervention will be significant and valuable (Baral & Bhargava, 2010).

It is important for organisations to realise that employees have lives outside their workplace and that they have families, which fulfil certain needs and agendas that is valuable to employees (Swindle & Moos, 1992). The results indicated that employees participating in their family domain obtained various home resources (such as home support, home-related developmental opportunities and home autonomy). These home resources showed significant relationships with dimensions of the family-to-work enrichment (i.e. family-work perspectives, family-work affect, family-work time management and family-work socio-capital). In order to compete successfully in the market place, organisations may need to develop personnel strategies and family-friendly policies that enhance family-work enrichment, because the experiences of employees in the family domain add value to their work domain. This means identifying the mechanisms by which resources gained at home (i.e. support, developmental opportunities and autonomy) are transferred to enrich their work domain. Organisations should also pay attention to how certain resources derived at home, are associated with levels of enrichment between family and work domains. This insight could ultimately lead to the development of family-friendly policies and practices within the work environment. By taking the above mentioned information into consideration and creating family-friendly policies and practices (see Stevens, Kiger, & Riley, 2006) it may attract and retain more staff for organisations (Hammer, Neal, Newsom, Brockwood, & Colton, 2005).

Organisations can utilise the newly developed MACE Work-Family Enrichment Instrument to measure the enrichment between the work and family lives of their employees. As mentioned above, if organisations can understand the resources gained by employees that enrich their work/family roles, intervention plans can be developed accordingly for the circumstances of the workplace. Consequently, better organisational and employee outcomes can be accomplished such as higher productivity and less absenteeism (Moncrieff & Pomerleau, 2000; Väänänen *et al.*, 2004). Organisations should consider work-related activities, policies and practices that facilitate work-family enrichment. In this way these organisations could benefit from the positive outcomes from experiences of their employees (Hammer, Cullen, Neal, Sinclair, & Shafiro, 2005).

6.3.2 Recommendations for future research

A few recommendations can also be made for future research. The newly developed MACE Work-Family Enrichment Instrument should be used across various occupations and organisations and between cultural groups to determine the generalisation of validity. According to Carlson, Kacmar and Williams (2000), additional validation of instruments across occupations and organisations are important to establish such instruments and to provide generalisability. It is anticipated that further validation will help researchers use the instrument with confidence and also add to the generalisability of research on enrichment in both work-to-family and family-to-work directions. Furthermore, it is suggested that a stratified sample should be used for future research on this topic of work-family enrichment, as this will provide a population that is representative of all groups. Such a stratified sample could lead to comparison studies between socio-demographic groups about their experiences of work-family enrichment.

Although a variety of antecedents and outcomes were included in the present study, further research is needed on several aspects. These include more unique antecedents (such as core-self evaluations (personality) or performance feedback) and outcomes (such as commitment or health-related outcomes) for each of the dimensions measured in the MACE instrument as opposed to the more general resources and outcomes measured in this study (such as work and home resources, satisfaction and engagement).

The newly developed MACE instrument makes such future research possible, which makes the instrument very valuable to positive work/family research. Furthermore, structural models representing work-family enrichment and well-being among employees in South Africa should also be tested. The development of a structural model would enhance the understanding of work-family enrichment and work resources in organisations and will also provide valuable information for the development of more resolute intervention programmes. Relationships between antecedents and outcomes should also be tested with work-family enrichment as a mediator or moderator. This will indicate whether work-family enrichment is indeed significant in the workplace. This insight will guide organisations to create and implement work-related policies that are also family-friendly.

Although material resources as sub-scale for the work-to-family direction did not perform as expected, future research should investigate the relevance of the material resources as proposed in Greenhaus and Powell's (2006) work-family enrichment model. Future research should also investigate material resources from the family-to-work direction. This will improve and build the knowledge about the resources gained in both directions of work and family, and how this resource (i.e. material) will enrich employees in both domains. It is also further suggested that material resources may differ across various occupations. In other words, material resources may include additional performance bonuses in the one organisation or distributing gifts in another organisation. These varying circumstances make it difficult to measure specific material resources. Therefore a much broader definition should be created for the contribution of this type of resource to work-family enrichment. This would make it more reachable to measure material resources across organisations.

It is also recommended that longitudinal research designs are used in future work-family enrichment research. This type of designs are established through data collection over a period of time, but based on the same questionnaire (Ployhart & Vandenberg, 2010). The use of longitudinal designs is required because levels of work-family enrichment undoubtedly fluctuate over time for many people (Montgomery, Peeters, Schaufeli, & Den Ouden, 2003).

References

- Andrich, D., & Sheridan, B. (2009). *Interpreting RUMM2030 (Part I)*. Perth: RUMM Laboratory.
- Aryee, S., Srinivas, E. S., & Tan, H. H. (2005). Rhythms of life: Antecedents and outcomes of work-family balance in employed parents. *Journal of Applied Psychology, 90*, 132-146.
- Balmforth, K., & Gardner, D. (2006). Conflict and facilitation between work and family: realizing the outcomes for organizations. *New Zealand Journal of Psychology, 35*(2), 69-76.
- Baral, R., & Bhargava, S. (2011). Examining the moderating influence of gender on the relationships between work-family antecedents and work-family enrichment. *Gender in Management: An International Journal, 26*, 122-147.
- Barnett, R. C. (1998). Toward a review and reconceptualization of the work/family literature. *Genetic, Social and General Psychology Monographs, 124*, 125-182.
- Barnett, R. C., & Hyde, J. S. (2001). Women, men, work, and family. An expansionist theory. *American Psychologist, 56*, 781-796.
- Bhargava, S., & Baral, R. (2009). Antecedents and consequences of work-family enrichment among Indian managers. *Psychological Studies, 54*, 213-225.
- Boyar, S. L., & Mosley, D. C. (2007). The relationship between core self-evaluations and work and family satisfaction: The mediating role of work-family conflict and facilitation. *Journal of Vocational Behavior, 71*, 265-281.
- Brockwood, K. J., Hammer, L. B., & Neal, M. B. (2003, April 11-13). *An examination of positive work-family facilitation among dual-earner couples in the sandwiched generation*. Paper presented at the 18th annual conferences of the Society for Industrial and Organizational Psychology, Orlando, FL.
- Carlson, D. S., Grzywacz, J. G., & Kacmar, K. M. (2010). The relationship of schedule flexibility and outcomes via the work/family interface. *Journal of Managerial Psychology, 25*, 330-355.
- Carlson, D. S., Grzywacz, J. G., & Zivnuska, S. (2009). Is work-family balance more than conflict and enrichment? *Human Relations, 62*, 1 459-1 486.

- Carlson, D. S., Kacmar, K. M., Wayne, J. H., & Grzywacz, J. G. (2006). Measuring the positive side of the work/family interface: Development and validation of a work-family enrichment scale. *Journal of Vocational Behavior, 68*, 131-164.
- Carlson, D. S., Kacmar, K. M., & Williams, L. J. (2000). Construction and initial validation of a multidimensional measure of work-family conflict. *Journal of Vocational Behavior, 56*, 249-276.
- Carlson, D., Zivnuska, S., Kacmar, K. M., Ferguson, M., & Whitten, D. (2011). Work-family enrichment and job performance: A constructive replication of affective events theory. *Journal of Occupational Health Psychology, 16*, 297-312.
- Cinamon, R. G., & Rich, Y. (2010). Work family relations: Antecedents and outcomes. *Journal of Career Assessment, 18*, 59-70.
- Crouter, A. C. (1984). Spillover from family to work: The neglected side of the work/family interface. *Human Relations, 37*, 425-442.
- DeVellis, R. F. (2003). *Scale development, theory and application* (2nd ed.). Thousand Oaks, CA: Sage.
- Dollard, M. F., & Winefield, A. H. (1998). A test of the Demand Control Support model of work stress in correctional officers. *Journal of Occupational Health Psychology, 3*, 1-23.
- Edwards, J. R., & Rothbard, N. P. (2000). Mechanisms linking work and family: Clarifying the relationship between work and family constructs. *Academy of Management Review, 25*, 178-199.
- Friedman, S. D., & Greenhaus, J. H. (2000). *Work and family – allies or enemies? What happens when business professionals confront life choices*. New York, NY: Oxford University Press.
- Frone, M. R. (2003). Work-family balance. In J. C. Quick, & L. E. Tetrick (Eds.), *Handbook of occupational health psychology* (pp. 143-162). Washington, DC: American Psychological Association.
- Gareis, K. C., Barnett, R. C., Ertel, K. A., & Berkman, L. F. (2009). Work-family enrichment and conflict: Additive effects, buffering, or balance? *Journal of Marriage and Family, 71*, 696-707.
- Gordon, J. R., Whelan-Berry, K. S., & Hamilton, E. H. (2007). The relationship among work-family conflict and enhancement, organizational work-family culture, and work outcomes for older working women. *Journal of Occupational Health Psychology, 12*, 350-364.

- Greenhaus, J. H., & Parasuraman, S. (1999). Research on work, family, and gender: Current status and future directions. In G. N. Powell (Ed.), *Handbook of gender and work* (pp. 391-412). Newbury Park, CA: Sage.
- Greenhaus, J. H., & Powell, G. N. (2006). When work and families are allies: A theory of work-family enrichment. *Academy of Management Review*, *31*(1), 72-92.
- Grzywacz, J. G. (2000). Work-family spillover and health during midlife: Is managing conflict everything? *American Journal of Health Promotion*, *14*(4), 236-243.
- Grzywacz, J. G., & Butler, A. B. (2005). The impact of job characteristics on work-to-family facilitation: Testing a theory and distinguishing a construct. *Journal of Occupational Health Psychology*, *10*, 97-109.
- Grzywacz, J. G., & Marks, N. F. (2000). Re-conceptualizing the work/family interface: An ecological perspective on the correlates of positive and negative spillover between work and family. *Journal of Occupational Health Psychology*, *5*, 111-126.
- Haar, J. M., & Bardoel, E. A. (2008). Positive spillover from the work/family interface: A study of Australian employees. *Asia Pacific Journal of Human Resource*, *46*, 275-287.
- Hakanen, J. J., Peeters, M. C. W., & Perhoniemi, R. (2011). Enrichment processes and gain spirals at work and at home: A 3-year cross-lagged panel study. *Journal of Occupational and Organizational Psychology*, *84*, 8-30.
- Hammer, L. B., Cullen, J. C., Neal, M. B., Sinclair, R. R., & Shafiro, M. V. (2005). The longitudinal effects of work-family conflict and positive spillover on depressed symptoms among dual-earner couples. *Journal of Occupational Health Psychology*, *10*(2), 138-154.
- Hammer, L. B., Neal, M. B., Newsom, J. T., Brockwood, K. J., & Colton, C. L. (2005). A longitudinal study of the effects of dual-earner couples' utilization of family-friendly workplace supports on work and family outcomes. *Journal of Applied Psychology*, *90*, 799-810.
- Hanson, G. C., Hammer, L. B., & Colton, C. L. (2006). Development and validation of a multidimensional scale of perceived work-family positive spillover. *Journal of Occupational Health Psychology*, *11*(3), 249-265.
- Hendriks, J., Fyfe, S., Styles, I., Skinner, R., & Merriman, G. (2012). Scale construction utilising the Rasch unidimensional measurement model: A measurement of adolescent attitudes towards abortion. *Australasian Medical Journal*, *5*(5), 251-261.

- Hill, E. J. (2005). Work-family facilitation and conflict, working fathers and mothers, work-family stressors and support. *Journal of Family Issues*, 26(6), 793-819.
- Hunter, E. M., Perry, S. J., Carlson, D. S., & Smith, S. A. (2010). Linking team resources to work-family enrichment and satisfaction. *Journal of Vocational Behavior*, 77, 304-312.
- Jaga, A., & Bagraim, J. (2011). The relationship between work-family enrichment and work-family satisfaction outcomes. *South African Journal of Psychology*, 41(1), 52-62.
- Jaga, A., Bagraim, J., & Williams, Z. (2013). Work-family enrichment and psychological health. *South African Journal of Industrial Psychology*, 39(2), 1-10.
- Karatepe, O. M., & Bekteshi, L. (2008). Antecedents and outcomes of work-family facilitation and family-work facilitation among frontline hotel employees. *International Journal of Hospitality Management*, 27, 517-528.
- Karatepe, O. M., & Kilic, H. (2009). The effects of two directions of conflict and facilitation on frontline employees' job outcomes. *The Service Industries Journal*, 29, 977-993.
- Karimi, L., & Nouri, A. (2009). Do work demands and resources predict work-to-family conflict and facilitation? A study of Iranian male employees. *Journal of Family and Economic Issues*, 30, 193-202
- Kirchmeyer, C. (1992a). Nonwork participation and work attitudes: A test of scarcity vs. expansion models of personal resources. *Human Relations*, 45, 775-795.
- Kirchmeyer, C. (1992b). Perceptions of nonwork-to-work spillover: Challenging the common view of conflict-ridden domain relationships. *Basic and Applied Social Psychology*, 13, 231-249.
- Lourel, M., Ford, M. T., Gamassou, C. E., Gueguen, N., & Hartmann, A. (2009). Negative and positive spillover between work and home. *Journal of Managerial Psychology*, 24, 438-449.
- Lu, J. F., Siu, O. L., Spector, P. E., & Shi, K. (2009). Antecedents and outcomes of a fourfold taxonomy of work-family balance in Chinese employed parents. *Journal of Occupational Health Psychology*, 14, 182-192.
- Masuda, A. D., McNall, L. A., Allen, T. D., & Nicklin, J. M. (2012). Examining the constructs of work-to-family enrichment and positive spillover. *Journal of Vocational Behavior*, 80, 197-210.
- McNall, L. A., Masuda, A. A., & Nicklin, J. M. (2010). Flexible work arrangements, job satisfaction, and turnover intentions: The mediating role of work-to-family enrichment. *Journal of Psychology*, 144, 61-81.

- Moncrieff, J., & Pomeleau, J. (2000). Trends in sickness benefits in Great Britain and the contribution of mental disorders. *Journal of Public Health Medicine, 22*(1), 59-67.
- Montgomery, A. J., Peeters, M. C. W., Schaufeli, W. B., & Den Ouden, M. (2003). Work-home interference among newspaper managers: Its relationship with burnout and engagement. *Anxiety, Stress & Coping, 16*, 195-211.
- Netemeyer, R. G., Boles, J. S., & McMurrin, R. (1996). Development and validation of work-family conflict and family-work conflict scales. *Journal of Applied Psychology, 81*, 400-410.
- Oosthuizen, J. (2011). Job characteristics, work-nonwork interference and the role of recovery strategies among employees in a tertiary institution (Unpublished master's dissertation), North-West University, Potchefstroom, South Africa.
- Ployhart, R. E., & Vandenberg, R. J. (2010). Longitudinal research: The theory, design, and analysis of change. *Journal of Management, 36*(1), 94-120.
- Ruderman, M. N., Ohlott, P. J., Panzer, K., & King, S. N. (2002). Benefits of multiple roles for managerial women. *Academy of Management Journal, 45*, 369-386.
- Semmer, N., Zapf, D., & Greif, S. (1996). Shared job strain: A new approach for assessing the validity of job stress measurements. *Journal of Occupational and Organisational Psychology, 69*, 293-310.
- Sieber, S. D. (1974). Toward a theory of role accumulation. *American Sociological Review, 39*, 567-578.
- Siu, O., Lu, J., Brough, P., Lu, C., Bakker, A. B., Kalliath, T., & Shi, K. (2010). Role resources and work-family enrichment: the role of work engagement. *Journal of Vocational Behavior, 77*, 470-480.
- Spector, P. E. (1994). Using self-report questionnaires in OB research: A comment on the use of a controversial method. *Journal of Organizational Behavior, 15*, 385-392.
- Spector, P. E. (2006). Method variance in organisational research: Truth or urban legend? *Organizational Research Methods, 9*(2), 221-232.
- Stephens, M. A., Franks, M. M., & Atienza, A. A. (1997). Where two roles intersect: Spillover between parent care and employment. *Psychology and Aging, 12*, 30-37.
- Stevens, D. P., Kiger, G., & Riley, P. J. (2006). His, hers, or ours? Work-to-family spillover, crossover, and family cohesion. *The Social Science Journal, 43*, 425-436.

- Sumer, H. C., & Knight, P. A. (2001). How do people with different attachment styles balance work and family? A personality perspective on work-family linkage. *Journal of Applied Psychology, 86*, 653-663.
- Swidle, R. W., & Moos, R. H. (1992). Life domains in stressors, coping and adjustment. In W. B. Walsh, K. H. Craik., & R. H. Price (Eds.), *Person-environment psychology, models and perspectives* (pp.1-33). Hillsdale, MI: Erlbaum.
- Tiedje, L. B., Wortman, C. B., Downey, G., Emmons, C., Biernat, M., & Lang, R. (1990). Women with multiple roles: Role-compatibility perceptions, satisfaction, and mental health. *Journal of Marriage and the Family, 52*, 63-72.
- Taylor, B. L., Delcampo, R. G., & Blancero, D. M. (2009). Work-family conflict/facilitation and the role of workplace supports for U.S. Hispanic professionals. *Journal of Organizational Behavior, 30*, 643-664.
- Väänänen, A., Kevin, M. V., Ala Mursula, L., Pentti, J., Kivimäki, M., & Vahtera, J. (2004). The double burden of and negative spillover between paid and domestic work: Associations with health among men and women. *Women and Health, 40*(3), 1-18.
- Van Steenbergen, E. F., Ellemers, N., & Mooijaart, A. (2009). Combining work and family: How family supportive work environments and work supportive home environments can reduce work-family conflict and enhance facilitation. In D. R. Crane, & E. J. Hill (Eds.), *Handbook of families & work: Interdisciplinary perspectives* (pp. 279-300). New York, NY: University Press of America.
- Voydanoff, P. (2002). Linkages between the work/family interface and work, family and individual outcomes. *Journal of Family Issues, 23*, 138-164.
- Voydanoff, P. (2004). The effects of work demands and resources on work-to-family conflict and facilitation. *Journal of Marriage and Family, 66*, 398-412.
- Voyandoff, P. (2005). The effects of community demands, resources, and strategies on the nature and consequences of the work/family interface: An agenda for future research. *Family Relations, 54*, 583-595.
- Wadsworth, L. L., & Owens, B. P. (2007). The effects of social support on work-family enhancement and work-family conflict in the public sector. *Public Administration Review, 67*, 75-87.

- Wall, T. D., Jackson, P. R., Mullarkey, S., & Parker, S. K. (1996). The demands-control model of job strain: A more specific test. *Journal of Occupational and Organizational Psychology*, *69*, 153-166.
- Wayne, J. H., Musisca, N., & Fleeson, W. (2004). Considering the role of personality in the work-family experience: Relationships of the big five to work-family conflict and facilitation. *Journal of Vocational Behavior*, *64*, 108-130.
- Wayne, J. H., Randel, A. E., & Stevens, J. (2006). The role of identity and work-family support in work-family enrichment and its work-related consequences. *Journal of Vocational Behavior*, *69*, 445-461.

Appendix A – Research Article 2

Table 1

DIF analysis for the various sub-groups using the complete set of items for the work-to-family sub-scale.

Group	Sub-group	N	Mean location	Standard deviation	F statistics	P
Gender	Male	211	0.83	1.09	0.08	0.783
	Female	308	0.86	1.18		
Age	Twenties	168	0.89	1.07	0.37	0.870
	Thirties	104	0.91	1.24		
	Forties	135	0.78	1.03		
	Fifties	95	0.84	1.29		
	Sixties	19	0.73	1.13		
	Seventies	1	-	-		
	Race	White	428	0.80		
Black		68	1.11	1.23		
Coloured		22	1.14	0.97		
Indian/Asian		4	0.65	0.75		
Qualification	School	210	0.93	1.21	1.53	0.216
	Post-school	312	0.80	1.09		

Appendix A continued

Table 2

DIF analysis for the various sub-groups using the complete set of items for the family-to-work sub-scale.

Group	Sub-group	N	Mean location	Standard deviation	F statistics	P
Gender	Male	202	1.67	1.49	0.26	0.613
	Female	290	1.59	1.73		
Age	Twenties	162	1.78	1.67	1.69	0.135
	Thirties	97	1.87	1.62		
	Forties	126	1.49	1.49		
	Fifties	89	1.31	1.69		
	Sixties	19	1.53	1.82		
	Seventies	1	-	-		
Race	White	411	1.56	1.59	3.07	0.028
	Black	59	2.20	1.81		
	Coloured	20	1.24	1.70		
	Indian/Asian	4	1.79	1.60		
Qualification	School	192	1.59	1.63	0.20	0.653
	Post-school	302	1.65	1.64		

Appendix A continued

Table 3

Tests of individual item fit for the work-to-family sub-scale with items ordered by increasing location.

Item	Location	SE	FitResid	ChiSq	Prob	Fit	DIF			All items			Item(s) deleted	Poor fitting items deleted		
							Category	F-ratio	p-value	Total Chi-square (df)	Chi-square P-value	PSI		Total Chi-square (df)	Chi-square P-value	PSI
<i>Skills (n = 479)</i>						<i>EX</i>				95.87 (48)	0.000	0.87		44.65 (35)	0.127	0.86
SWF3	-0.30	0.08	-2.61	9.70	0.287		Age	3.04	0.01							
SWF6	-0.16	0.07	-1.01	10.92	0.206		-	-	-							
SWF4	-0.15	0.08	-3.42	13.56	0.094		-	-	-							
SWF1	0.03	0.07	1.96	12.18	0.143		-	-	-							
SWF2	0.06	0.07	-2.79	14.24	0.076		-	-	-							
SWF5	0.52	0.07	2.27	35.27	0.000	PR	Qual	5.54	0.019				x			
<i>Perspectives (n = 500)</i>						<i>EX</i>				113.98 (64)	0.000	0.90		34.72 (48)	0.925	0.87
PWF4	-0.45	0.07	-0.93	12.48	0.131		-	-	-							
PWF3	-0.30	0.07	-1.24	4.84	0.774		-	-	-							

Table 3 continues

Item	Location	SE	FitResid	ChiSq	Prob	Fit	DIF			All items			Item(s) deleted	Poor fitting items deleted				
							Category	F-ratio	p-value	Total Chi-square (df)	Chi-square P-value	PSI		Total Chi-square (df)	Chi-square P-value	PSI		
PWF7	-0.30	0.07	-2.67	19.45	0.013		-	-	-									
PWF8	-0.03	0.07	-0.26	8.89	0.352		-	-	-									
PWF6	0.02	0.07	-1.44	9.85	0.276		-	-	-									
PWF5	0.07	0.07	-0.64	8.08	0.425		-	-	-									
PWF1	0.42	0.07	2.10	30.75	0.000	PR	-	-	-				x					
PWF2	0.58	0.07	2.19	19.64	0.012		Race	2.89	0.035				x					
<i>Self-concept (n = 465)</i>						<i>EX</i>				<i>59.27</i>	<i>0.128</i>	<i>0.88</i>		<i>30.49</i>	<i>0.861</i>	<i>0.89</i>		
										<i>(48)</i>				<i>(40)</i>				
PSWF1	-0.31	0.08	1.82	24.78	0.002		Qual	8.92	0.003				x					
PSWF6	-0.24	0.08	1.07	4.14	0.844		-	-	-									
PSWF2	-0.16	0.08	-0.46	4.15	0.843		-	-	-									
PSWF4	0.09	0.08	-3.18	8.63	0.375		-	-	-									
PSWF5	0.16	0.08	-1.35	6.26	0.619		-	-	-									
PSWF3	0.45	0.08	-1.98	11.33	0.184		-	-	-									

Table 3 continues

Item	Location	SE	FitResid	ChiSq	Prob	Fit	DIF			All items			Item(s) deleted	Poor fitting items deleted		
							Category	F-ratio	p-value	Total Chi-square (df)	Chi-square P-value	PSI		Total Chi-square (df)	Chi-square P-value	PSI
<i>Psychological (n = 467)</i>						<i>GD</i>				<i>113.96 (48)</i>	<i>0.000</i>	<i>0.87</i>		<i>29.20 (18)</i>	<i>0.046</i>	<i>0.83</i>
PPWF4	-0.60	0.08	-4.81	28.45	0.000	PR	-	-	-				x			
PPWF5	-0.34	0.08	0.18	11.27	0.187		Race	3.08	0.027				x			
PPWF3	-0.14	0.07	-2.34	18.89	0.015		-	-	-							
PPWF2	0.23	0.07	-1.66	6.98	0.538		-	-	-							
PPWF1	0.38	0.07	0.24	8.61	0.376		Gender	4.05	0.045							
PPWF6	0.47	0.08	4.35	39.76	0.000	PR	Gender	3.81	0.051				x			
<i>Physical (n = 480)</i>						<i>EX</i>				<i>50.15 (48)</i>	<i>0.388</i>	<i>0.86</i>		-	-	-
PHWF4	-0.33	0.08	-3.12	10.60	0.225		-	-	-							
PHWF3	-0.15	0.07	-0.03	5.63	0.688		-	-	-							
PHWF5	-0.09	0.07	-3.28	7.20	0.516		-	-	-							
PHWF1	-0.03	0.07	0.96	7.73	0.461		-	-	-							

Table 3 continues

Item	Location	SE	FitResid	ChiSq	Prob	Fit	DIF			All items			Item(s) deleted	Poor fitting items deleted				
							Category	F-ratio	p-value	Total Chi-square (df)	Chi-square P-value	PSI		Total Chi-square (df)	Chi-square P-value	PSI		
PHWF6	0.08	0.07	0.52	4.66	0.793		-	-	-									
PHWF2	0.52	0.07	1.99	14.34	0.073		-	-	-									
<i>Socio-capital (n = 463)</i>						<i>EX</i>				88.67 (48)	0.000	0.85		-	-	-		
SOWF3	-0.31	0.07	-4.46	15.24	0.055		Qual	3.99	0.046									
SOWF4	-0.25	0.08	-4.23	23.14	0.003		-	-	-									
SOWF1	-0.07	0.07	1.58	8.89	0.352		-	-	-									
SOWF5	0.14	0.07	-1.09	8.09	0.425		Race	2.76	0.042									
SOWF6	0.23	0.07	3.17	20.23	0.010		Qual	4.96	0.026									
SOWF2	0.27	0.07	0.37	13.08	0.109		-	-	-									
							Gender	0.03	0.044									
							Age	2.64	0.023									
<i>Time management (n = 460)</i>						<i>EX</i>				74.21 (42)	0.002	0.87		-	-	-		
TWF5	-0.32	0.08	-1.48	12.03	0.100		-	-	-									
TWF1	-0.30	0.08	-0.24	10.01	0.188		-	-	-									
TWF2	-0.11	0.08	-4.73	6.61	0.471		-	-	-									
TWF3	0.00	0.08	-5.10	10.02	0.187		-	-	-									
TWF4	0.36	0.09	-2.34	16.50	0.021		-	-	-									
TWF6	0.37	0.08	1.46	19.04	0.008		-	-	-									

Table 3 continues

Item	Location	SE	FitResid	ChiSq	Prob	Fit	DIF			All items			Item(s) deleted	Poor fitting items deleted		
							Category	F-ratio	p-value	Total Chi-square (df)	Chi-square P-value	PSI		Total Chi-square (df)	Chi-square P-value	PSI
<i>Material resources (n = 374)</i>							<i>GD</i>			<i>110.26</i> <i>(42)</i>	<i>0.000</i>	<i>0.90</i>		<i>45.79</i> <i>(28)</i>	<i>0.018</i>	<i>0.82</i>
MWF5	-1.05	0.09	0.39	30.16	0.000	PR	Race	2.74	0.043							x
MWF1	-0.03	0.08	-2.93	7.44	0.282		-	-	-							x
MWF3	0.01	0.08	-5.34	12.96	0.044		-	-	-							
MWF6	0.03	0.08	-4.84	16.96	0.009		-	-	-							
MWF4	0.12	0.08	0.02	6.79	0.341		-	-	-							
MWF2	0.37	0.08	1.57	9.32	0.156		-	-	-							
MWF7	0.54	0.08	3.20	26.63	0.000	PR	-	-	-							x

NOTE: EX, Excellent fit; GD, Good fit; PR, Poor fit

NOTE: Values in bold indicate high positive/negative fit residuals

Appendix A continued

Table 4

Tests of individual item fit for the family-to-work sub-scale with items ordered by increasing location.

Item	Location	SE	FitResid	ChiSq	Prob	Fit	DIF			All items			Item(s) deleted	Poor fitting items deleted		
							Category	F-ratio	p-value	Total Chi-square (df)	Chi-square P-value	PSI		Total Chi-square (df)	Chi-square P-value	PSI
<i>Skills (n = 461)</i>						<i>EX</i>				45.12 (42)	0.343	0.89	-	-	-	
SFW6	-0.40	0.09	-0.98	6.64	0.467		Race	3.12	0.017							
SFW1	-0.28	0.08	0.69	7.74	0.356		-	-	-							
SFW4	-0.17	0.09	-4.94	5.97	0.543		-	-	-							
SFW3	-0.16	0.09	-4.69	8.62	0.281		-	-	-							
SFW5	0.08	0.09	-0.12	10.19	0.178		-	-	-							
SFW2	0.94	0.09	-4.13	5.94	0.547		-	-	-							
<i>Perspectives (n = 457)</i>						<i>EX</i>				98.12 (64)	0.004	0.90	-	-	-	
PFW4	-0.40	0.08	-2.65	13.82	0.087		Race	3.43	0.017							

Table 4 continues

Item	Location	SE	FitResid	ChiSq	Prob	Fit	DIF			All items			Item(s) deleted	Poor fitting items deleted			
							Category	F-ratio	P-value	Total Chi-square (df)	Chi-square P-value	PSI		Total Chi-square (df)	Chi-square P-value	PSI	
PFW3	-0.37	0.08	-1.81	17.09	0.029	-	-	-									
PFW6	0.01	0.08	-0.24	3.69	0.884	Age	3.96	0.002									
PFW2	0.04	0.08	-3.16	10.97	0.203	-	-	-									
PFW1	0.11	0.08	-2.69	14.14	0.078	-	-	-									
PFW5	0.15	0.08	-0.64	5.17	0.740	-	-	-									
PFW8	0.20	0.08	0.44	19.96	0.010	-	-	-									
PFW7	0.27	0.08	-0.88	13.29	0.102	-	-	-									
<i>Self-concept (n = 445)</i>						<i>EX</i>			<i>60.23 (48)</i>	<i>0.111</i>	<i>0.89</i>		<i>51.35 (35)</i>	<i>0.037</i>	<i>0.87</i>		
PSFW2	-0.50	0.09	-0.16	12.89	0.116	Qual	3.96	0.047									
PSFW3	-0.18	0.09	-3.16	4.63	0.797	Race	2.84	0.038									
PSFW5	-0.05	0.09	-4.65	12.50	0.130	Qual	7.60	0.006									
PSFW4	0.05	0.09	-3.67	9.02	0.341	Qual	4.21	0.041				x					
PSFW6	0.16	0.09	-0.45	2.16	0.976	-	-	-									

Table 4 continues

Item	Location	SE	FitResid	ChiSq	Prob	Fit	DIF			All items			Item(s) deleted	Poor fitting items deleted				
							Category	F-ratio	P-value	Total Chi-square (df)	Chi-square P-value	PSI		Total Chi-square (df)	Chi-square P-value	PSI		
PSFW1	0.52	0.09	1.99	19.05	0.015		-	-	-									
<i>Psychological (n = 411)</i>						<i>GD</i>				98.84	0.000	0.88		42.32	0.012	0.85		
PPFW3	-0.86	0.09	-5.89	19.42	0.007		Race	2.93	0.034				x					
PPFW4	-0.60	0.09	-6.45	14.87	0.038		-	-	-									
PPFW1	-0.15	0.09	3.62	42.60	0.000	PR	Race	2.96	0.032				x					
PPFW5	0.10	0.10	-2.98	11.11	0.134		-	-	-									
PPFW6	0.64	0.10	-0.40	4.66	0.702		-	-	-									
PPFW2	0.87	0.10	-3.16	6.18	0.518		-	-	-									
<i>Physical (n = 427)</i>						<i>GD</i>				92.09	0.000	0.89		22.74	0.535	0.89		
PHFW4	-0.77	0.09	-5.43	20.02	0.010		Gender	4.70	0.031									
PHFW1	-0.54	0.09	-1.48	13.58	0.093		-	-	-									

Table 4 continues

Item	Location	SE	FitResid	ChiSq	Prob	Fit	DIF			All items			Item(s) deleted	Poor fitting items deleted				
							Category	F-ratio	P-value	Total Chi-square (df)	Chi-square P-value	PSI		Total Chi-square (df)	Chi-square P-value	PSI		
PHFW2	-0.29	0.09	-4.03	8.84	0.356		-	-	-									
PHFW3	-0.24	0.09	-4.29	4.94	0.764		Gender	3.99	0.047									
PHFW6	0.17	0.09	2.93	35.14	0.000	PR	-	-	-				x					
PHFW5	1.68	0.09	-0.91	9.57	0.296		Age	3.48	0.004					x				
							Race	4.44	0.004									
Socio-capital (n = 416)						GD				122.28 (48)	0.000	0.86		28.49 (24)	0.240	0.87		
SOFW3	-0.87	0.09	-5.17	21.49	0.006		Race	3.25	0.022									
							Qual	9.56	0.002									
SOFW1	-0.53	0.09	0.63	9.04	0.339		-	-	-									
SOFW5	0.08	0.09	0.48	26.40	0.001		Qual	9.30	0.003				x					
SOFW6	0.31	0.09	1.47	29.56	0.000	PR	-	-	-				x					
SOFW4	0.48	0.09	-4.93	18.96	0.015		-	-	-									
SOFW2	0.53	0.09	-1.68	16.83	0.032		Qual	4.23	0.040									

Table 4 continues

Item	Location	SE	FitResid	ChiSq	Prob	Fit	DIF			All items			Item(s) deleted	Poor fitting items deleted		
							Category	F-ratio	p-value	Total Chi-square (df)	Chi-square P-value	PSI		Total Chi-square (df)	Chi-square P-value	PSI
<i>Time management (n = 433)</i>						<i>GD</i>			85.93	0.001	0.89		16.25	0.701	0.87	
TFW1	-0.37	0.09	-0.02	19.07	0.014	-	-	-								
TFW5	-0.21	0.09	-1.72	4.78	0.781	Qual	4.40	0.037				x				
TFW3	-0.11	0.09	-5.91	8.75	0.364	-	-	-								
TFW4	-0.01	0.09	-6.02	17.81	0.023	-	-	-								
TFW2	0.05	0.09	-3.68	5.14	0.743	-	-	-								
TFW6	0.65	0.08	2.70	30.39	0.000	PR	-	-				x				

NOTE: EX, Excellent fit; GD, Good fit; PR, Poor fit

NOTE: Values in bold indicate high positive/negative fit residuals

Appendix A continued

MWF4 having capital that en $\text{Locn} = -0.115$ $\text{Spread} = 0.289$ $\text{FitRes} = 7.813$ $\text{ChiSq[Pr]} = 0.000$ $\text{F[Pr]} = 0.000$

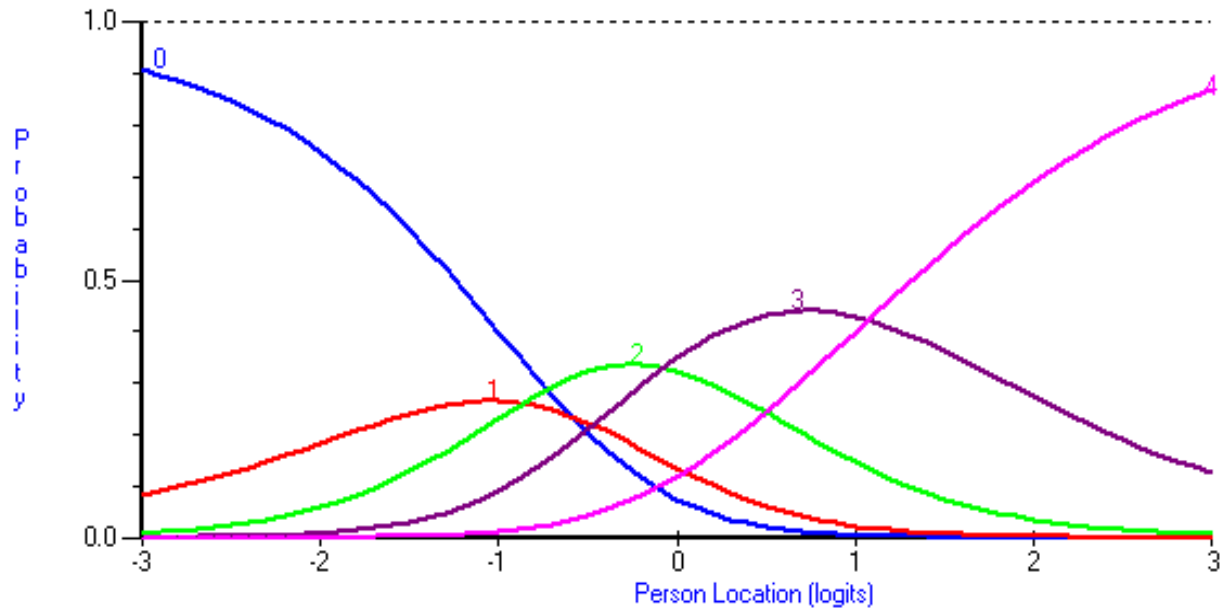


Figure 1: Threshold for the item MWF4

SWF1 the competencies I gai $\text{Locn} = 0.304$ $\text{Spread} = 0.752$ $\text{FitRes} = 1.625$ $\text{ChiSq[Pr]} = 0.173$ $\text{F[Pr]} = 0.183$

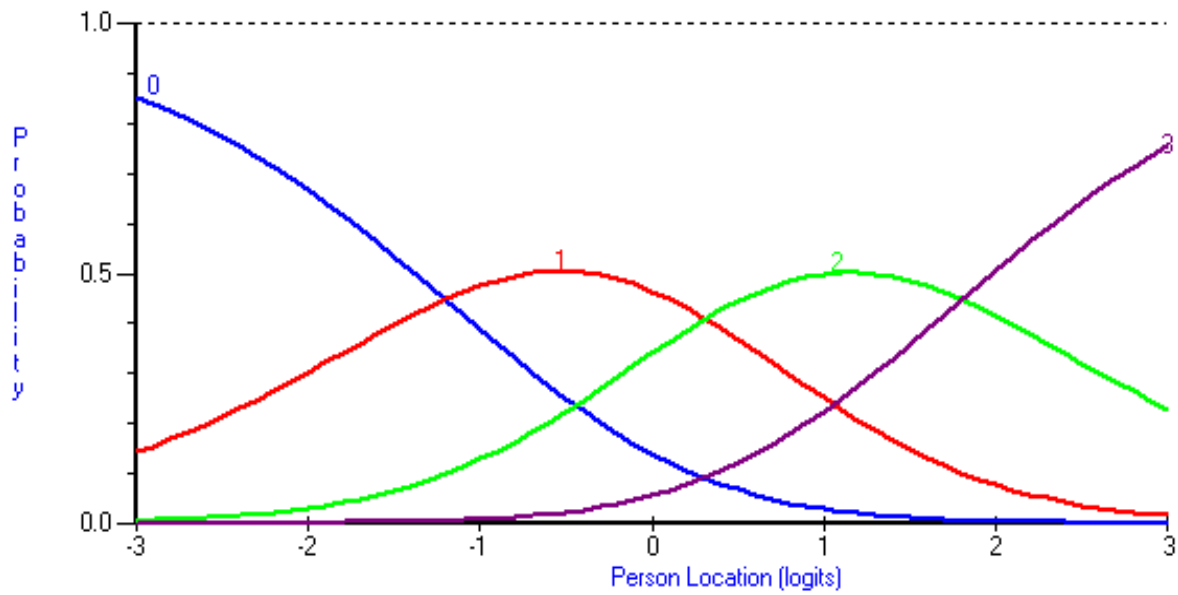


Figure 2: Category characteristics curves for the item SWF1

Appendix A continued

PPWF2 my work that makes me Locn = 0.092 Spread = 0.575 FitRes = 1.172 ChiSq[Pr] = 0.037 F[Pr] = 0.083

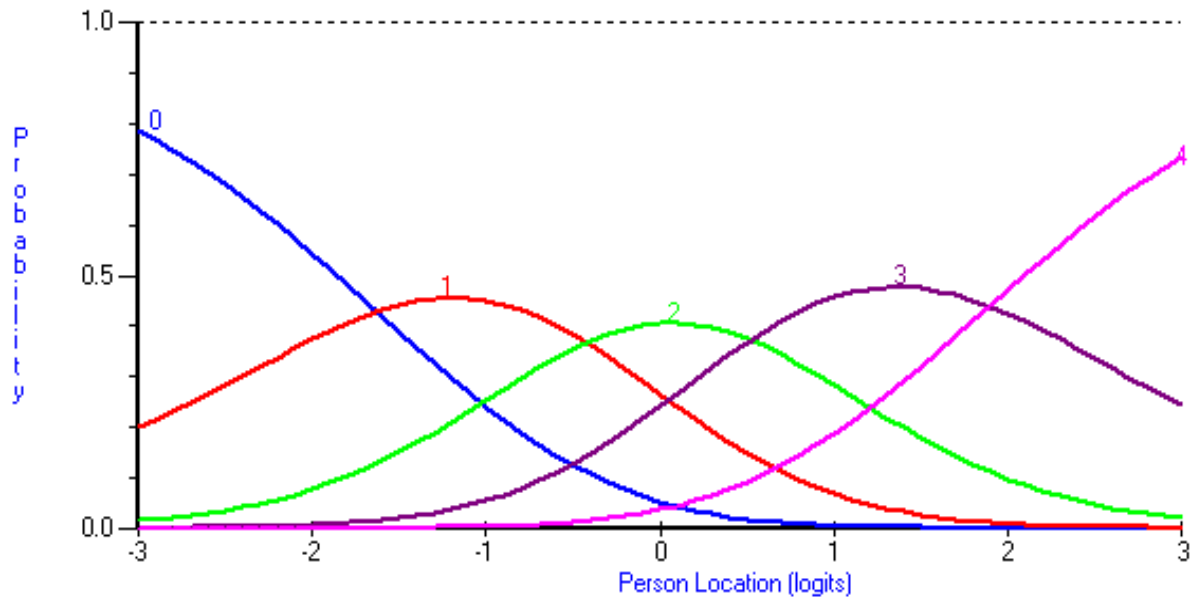


Figure 3: Category characteristics curves for the item PPWF2

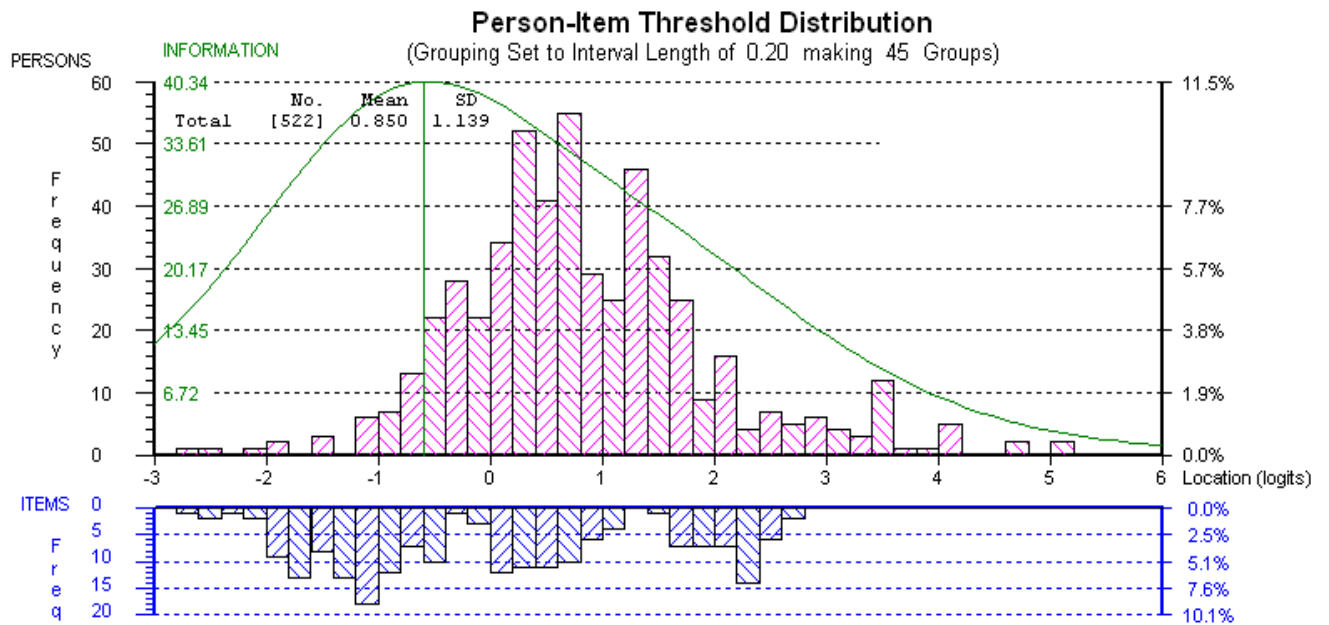


Figure 4: Item/person threshold distribution map

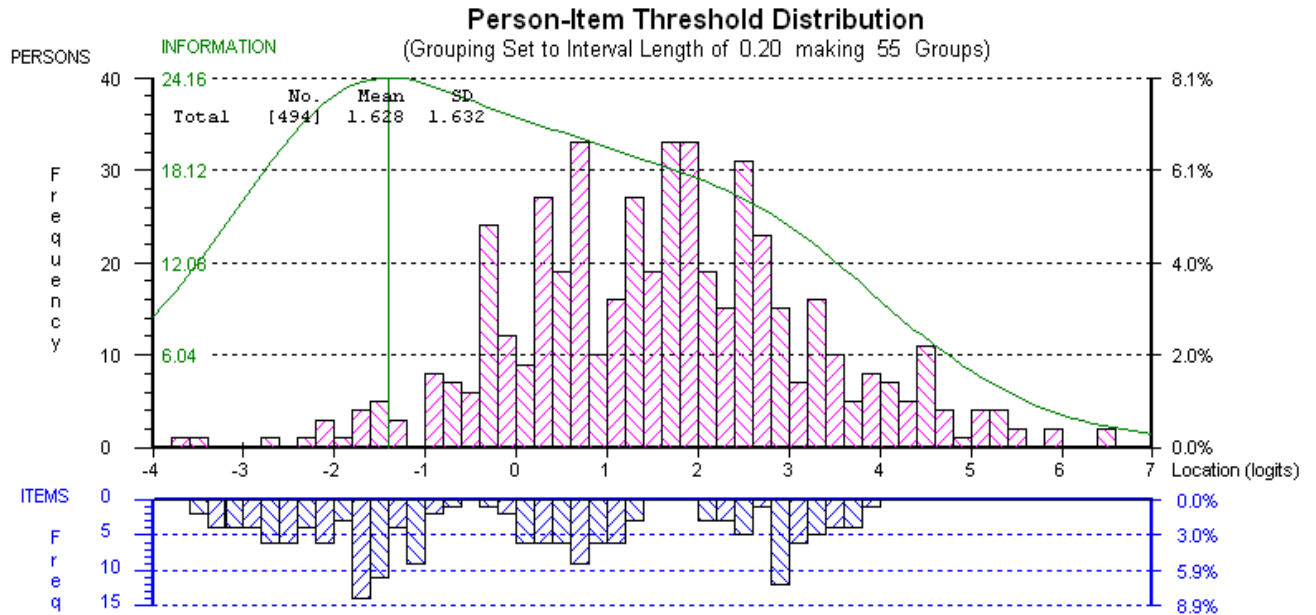


Figure 5: Item/person threshold distribution map

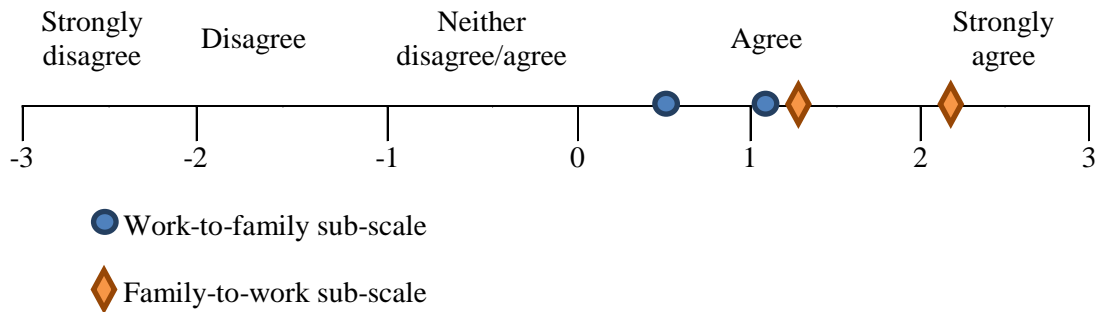


Figure 6: Response categories

Appendix B – Research Article 3

Table 1

Final MACE Work-Family Enrichment items

Work-family enrichment items	
Work-family perspectives	
<i>My family life is improved by...</i>	
Item 1	...the skills I have developed at work
Item 2	...my work showing me different viewpoints
Item 3	...my work that helps me to understand different viewpoints
Item 4	...the viewpoints I have learned through my work
Item 5	...my work showing me different perspectives
Item 6	...the perspectives I have learned through my work
Work-family Affect	
<i>My family life is improved by...</i>	
Item 7	...my work that puts me in a good mood
Item 8	...my work that makes me feel happy
Item 9	...being energised at work
Work-family Time-management	
<i>My family life is improved by...</i>	
Item 10	...managing my time at work
Item 11	...managing my pace at work
Item 12	...maintaining my time schedule at work
Item 13	...keeping a sufficient pace at work
Item 14	...using my time effectively at work
Item 15	...obtaining a work schedule
Work-family Socio-Capital	
<i>My family live is improved by...</i>	
Item 16	...maintaining good relationships with my colleagues
Item 17	...the support I receive from my colleagues
Item 18	...having good relationships at work

Table 2
Final MACE Family-Work enrichment items

Family-work enrichment items	
Family-work perspectives	
<i>My work is improved by...</i>	
Item 1	...the skills I learn in my family life
Item 2	...my family showing me different viewpoints
Item 3	...the values I have learned through my family life
Item 4	...obtaining values to which I am exposed to in my family life
Item 5	...the perspectives I have learned through my family
Family-work Affect	
<i>My work is improved by...</i>	
Item 6	...my sense of accomplishment I have developed in my family life
Item 7	...the self-worth I have in my family life
Item 8	...the renewed assurance I gain through my family life
Item 9	...my family that puts me in a good mood
Item 10	...being optimistic about my family life
Family-work Time-management	
<i>My work is improved by...</i>	
Item 11	...maintaining my time schedule in my family life
Item 12	...managing my time in my family life
Item 13	...keeping a sufficient pace in my family life
Family-work Socio-Capital	
<i>My work is improved by...</i>	
Item 14	...the support I receive from my family
Item 15	...maintaining good relationships with my family
Item 16	...being supportive in my family life

Competing models for work-family enrichment

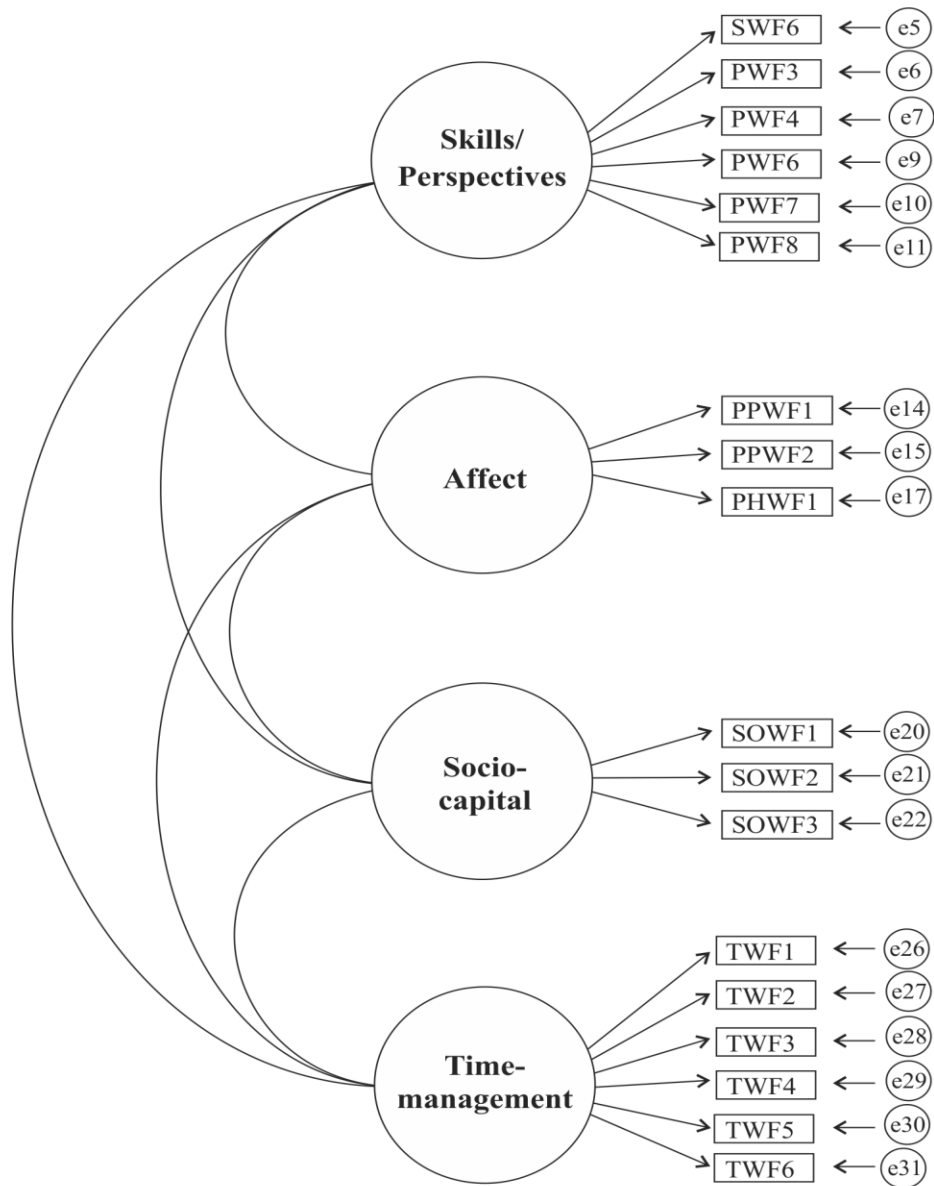


Figure 1: M1 - Four-factor “theoretical model”

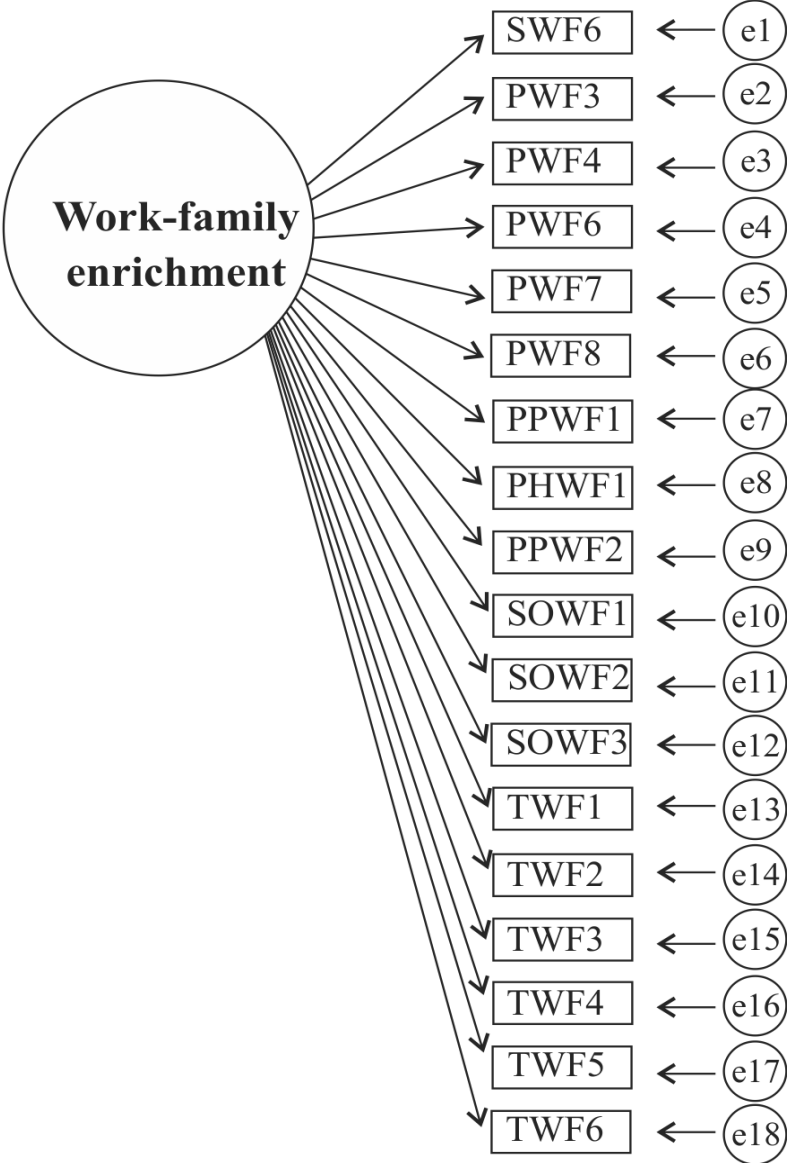


Figure 2: M2 – One-factor model

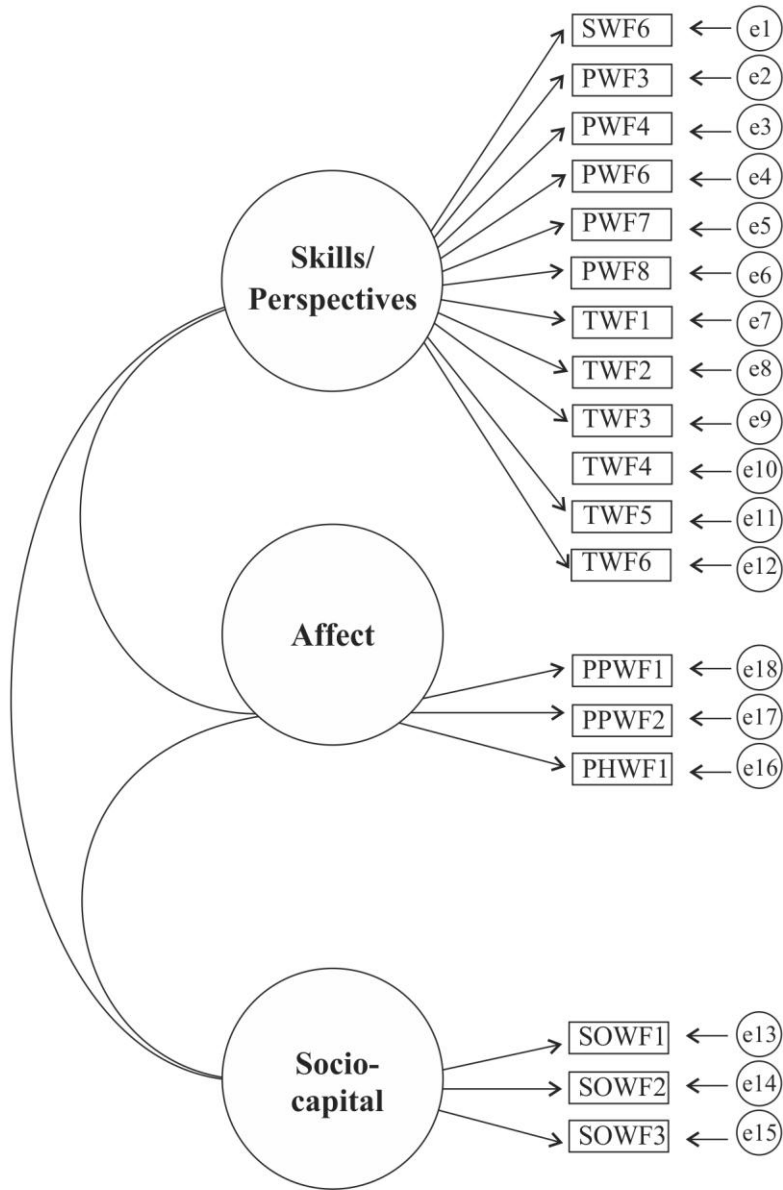


Figure 3: M3 - Three-factor model

Competing models for family-work enrichment

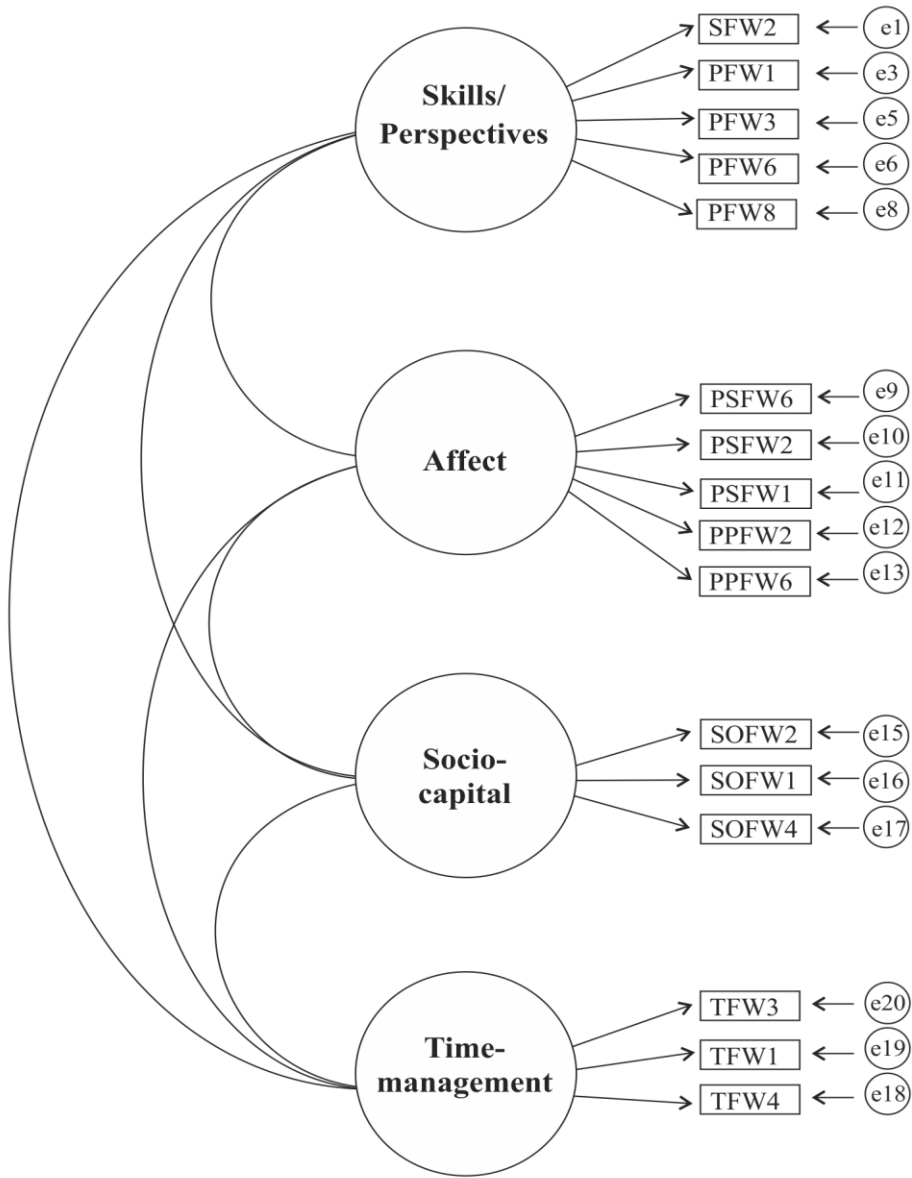


Figure 1: M1 – *Four-factor “theoretical model”*

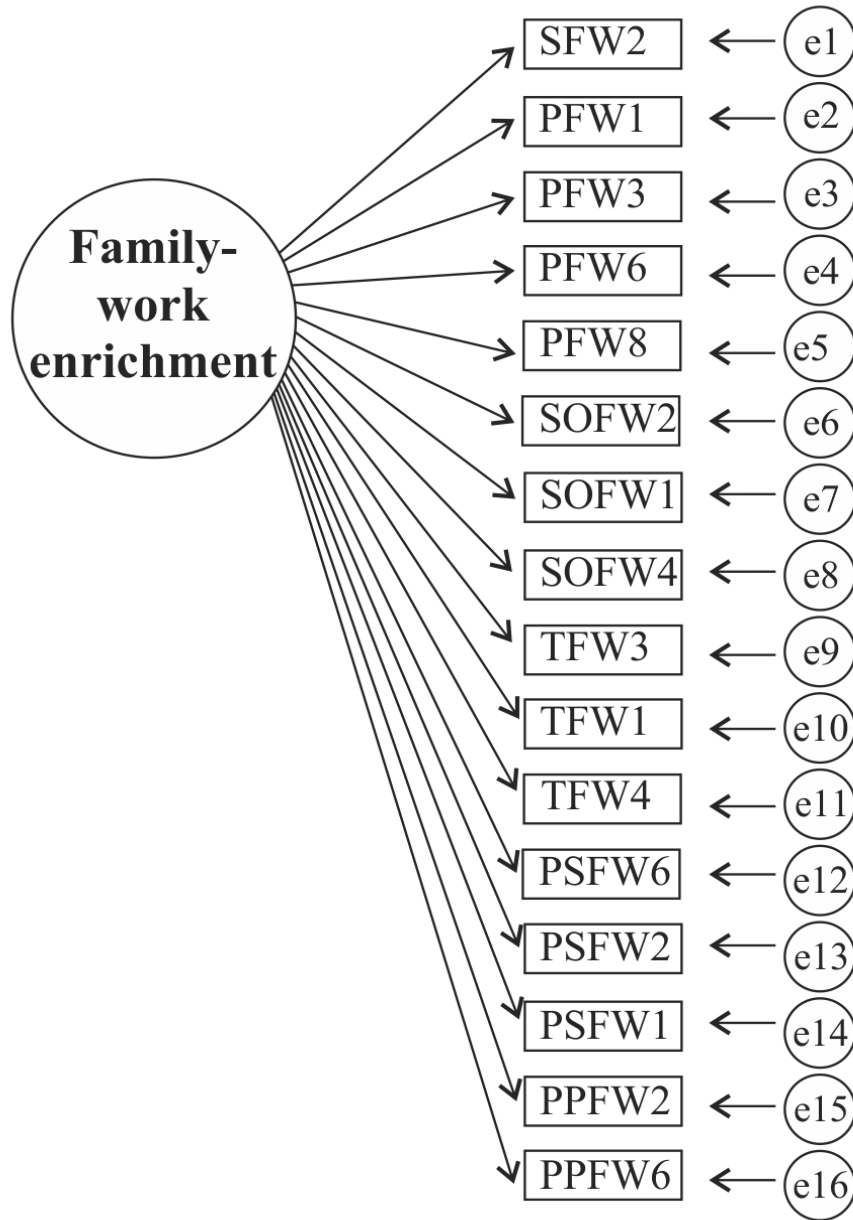


Figure 2: *M2 – One-factor model*

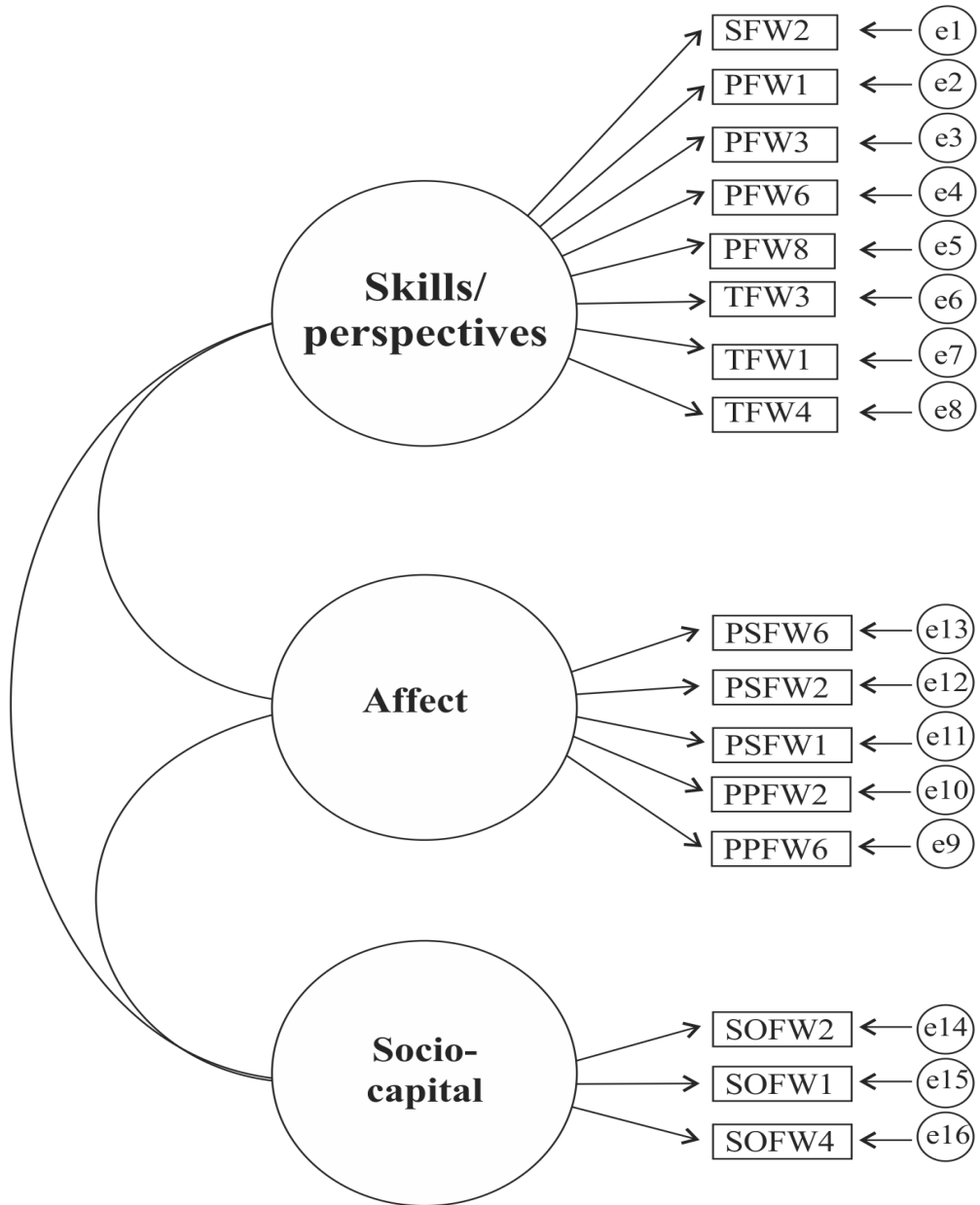


Figure 3: M3 – Three-factor model

17 La Rochelle Street
Berg-en-Dal
WELLINGTON
7655
25 November 2013

TO WHOM IT MAY CONCERN:

I hereby confirm that this thesis by Ms Marissa de Klerk was edited, processed and groomed to the best of my ability, including some recommendations for rephrasing and stylistic restructuring.

Rev Claude Vosloo
Language and knowledge practitioner and consultant

Home of Creativity/Kreatiwiteitshuis
<http://homeofcreativity.co.za/info>

SATI reference no: 100 2432

Home of Creativity ULTD 

Don't think outside the box, reinvent the box

17 La Rochelle Street
Berg-en-Dal
WELLINGTON
7655
05 May 2014

TO WHOM IT MAY CONCERN:

I hereby confirm that this final revision of the thesis by Ms Marissa de Klerk was groomed to the best of my ability, including some recommendations to improve the language and enhance the presentation.

Rev Claude Vosloo
Language and knowledge practitioner and consultant

Home of Creativity/Kreatiwiteitshuis
<http://homeofcreativity.co.za/info>

SATI reference no: 100 2432

Home of Creativity ULTD 

Don't think outside the box, reinvent the box

