

THE UNIVERSITY OF LIVERPOOL

Model of career influences: female game workers

**Thesis submitted in accordance with the requirements of the
University of Liverpool for the degree of Doctor in Philosophy by
Julie Prescott.**

March 2011

Content

CONTENT	I
DECLARATION OF AUTHENTICITY	XI
ACKNOWLEDGEMENTS	XII
ABSTRACT	XIII
INTRODUCTION	1
GENDER DIFFERENCES IN PLAYING COMPUTER GAMES	3
FACTS ABOUT WOMEN GAMERS.....	8
GAME-WORKERS	12
THE CURRENT STUDY	18
MEASURES USED IN THE STUDY (THESIS) AND THE SCCT FRAMEWORK.....	20
THESIS LAYOUT	22
THESIS OBJECTIVES	23
CHAPTER 1: LITERATURE REVIEW	24
1.1 GENDERED WORKPLACE SEGREGATION	25
1.1.1 OCCUPATIONAL SEGREGATION.....	25
1.1.2 MALE DOMINATED OCCUPATIONS	29
1.1.3 MEN WORKING IN FEMALE DOMINATED OCCUPATIONS.....	31
1.1.4 FEMALE DOMINATED OCCUPATIONS	34
SUMMARY	37
1.2 STEREOTYPES AND ATTITUDES	37
1.2.1 STEREOTYPE THREAT	37
1.2.2. SOLO STATUS	40
1.2.3. GENDER ROLE ATTITUDE	41
SUMMARY	43
1.3 SCIENCE, ENGINEERING AND TECHNOLOGY (SET)	44
1.3.1 THE SET SECTOR	44
1.3.2 WOMEN IN THE INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) SECTOR.....	46
SUMMARY	60
1.4 CAREER DEVELOPMENT THEORIES AND OCCUPATIONAL CHOICE	61
1.4.1 HOLLAND’S THEORY	61
1.4.2 SCHEIN’S CAREER ANCHORS.....	62
1.4.3 SOCIAL COGNITIVE CAREER THEORY (SCCT).....	64
1.4.4 WOMEN’S CAREERS AND SCCT	67
1.4.5 THEORIES OF OCCUPATIONAL CHOICE	69
SUMMARY	73

1.5 INDIVIDUAL DIFFERENCES AND THE ENVIRONMENT.....	74
1.5.1 CAREER MOTIVATION	74
1.5.1.1 INTRINSIC AND EXTRINSIC MOTIVATION	75
1.5.2. PERSON-ENVIRONMENT FIT	77
1.5.3 JOB SATISFACTION.....	79
SUMMARY	81
1.6. IDENTITY	82
1.6.1 IDENTITY AND SOCIAL IDENTITY THEORY	82
1.6.2 GENDER ROLE IDENTITY	87
1.6.3 CROSS-CULTURAL STUDIES OF THE BSRI.....	91
SUMMARY	93
1.7 THE SELF, CAREER AND GENDER ISSUES.....	94
1.7.1 SELF-EFFICACY	94
1.7.2 SELF ESTEEM.....	97
1.7.2.1 GENDER DIFFERENCES IN SELF ESTEEM	99
SUMMARY	103
1.8 CAREER FACTORS.....	104
1.8.1 CAREER PROGRESSION, PROMOTION AND ASPIRATIONS.....	104
1.8.2 CAREER BARRIERS.....	108
1.8.3 WOMEN IN LEADERSHIP AND SENIOR ROLES	110
1.8.3.1 CHARACTERISTICS OF A GOOD LEADER/MANAGER	111
SUMMARY	115
1.9 LIFE ISSUES.....	116
1.9.1 WORK LIFE BALANCE	116
1.9.2 LONG HOURS CULTURE.....	119
1.9.3 PARENTHOOD	122
1.9.4 WOMEN WITHOUT CHILDREN	123
1.9.5 CHILDLESS WOMEN IN SENIOR POSITIONS.....	125
SUMMARY	126
1.10 CULTURE AND GENERATION DIFFERENCES.....	127
1.10.1 CULTURAL ISSUES.....	127
1.10.2 GENERATIONAL DIFFERENCES	130
1.11 LITERATURE REVIEW SUMMARY	132
1.12 STUDY DIRECTION.....	133
1.13 CAREER INFLUENCES MODEL HYPOTHESES AND JUSTIFICATION	134
1.14 OTHER RESEARCH HYPOTHESES AND JUSTIFICATION	136
CHAPTER 2: METHODOLOGY.....	139
2.1 PHASE ONE: PILOT STUDY	139
2.1.1 BIOGRAPHICAL DETAILS.....	139
2.1.2 THE QUESTIONS.....	139

2.1.3 ANALYSIS.....	140
2.1.4 SUMMARY OF MAIN FINDINGS	140
2.2 PHASE TWO: MAIN STUDY.....	141
2.2.1 SAMPLING	141
2.2.2 STUDY PROMOTION	141
2.2.3 DISTRIBUTION	142
2.2.4 ETHICAL CONSIDERATIONS.....	143
2.2.5 STUDY DESIGN.....	143
2.2.6 THE DEVELOPMENT OF THE SURVEY	144
2.2.7 DATA ANALYSIS	149
2.2.8 STRUCTURAL EQUATION MODELLING (SEM)	149
CHAPTER 3: RESULTS.....	152
3.1 DESCRIPTIVE STATISTICS.....	152
PERSONAL AND PROFESSIONAL BIOGRAPHICAL DATA	152
GENDER	152
AGE.....	152
ETHNIC ORIGIN.....	153
COUNTRY OF WORK.....	153
NATIONALITY	154
MARITAL STATUS.....	154
SEXUALITY	155
CHILDREN	155
HEALTH PROBLEMS OR DISABILITIES.....	155
PROFESSIONAL IDENTITY	155
GRADE/LEVEL	156
JOB TITLE	156
NUMBER OF HOURS	157
EMPLOYMENT STATUS	157
EDUCATIONAL LEVEL.....	157
LENGTH OF TIME IN THE GAMES INDUSTRY	158
FUTURE INTENSIONS	158
PROMOTION	158
RELOCATION.....	159
PREVIOUS INDUSTRIES.....	159
GAME PLAY.....	159
CAREER MOTIVATION.....	160
JOB AND ORGANISATIONAL FIT	161
SATISFACTION AT WORK.....	162
GENDER ROLE IDENTITY	163
GENDER IDENTIFICATION	165
SELF-EFFICACY.....	166
SELF ESTEEM.....	166

WORK LIFE BALANCE ISSUES.....	167
CAREER PROGRESSION AND PROMOTION.....	170
BARRIERS TO CAREER PROGRESSION	171
GENERATIONAL DIFFERENCES.....	173
3.2 CORRELATIONS	175
3.3 GROUP COMPARISONS	176
3.4 T TESTS ANALYSIS	176
T TEST: AREA OF WORK - DEVELOPMENTAL OR NON-DEVELOPMENTAL	176
T TEST: CHILDREN - PARTICIPANTS WITH OR WITHOUT CHILDREN.....	177
T TEST: CHILDREN – PARTICIPANTS IN A DEVELOPMENTAL AREA WITH/WITHOUT CHILDREN.....	178
T TEST: COUNTRY OF WORK - PARTICIPANTS WORKING IN THE UK AND USA	178
T TEST: COUNTRY OF WORK – PARTICIPANTS IN A DEVELOPMENTAL AREA OF WORK WORKING IN THE UK AND USA	180
T TEST: GAME PLAY - PARTICIPANTS THAT DID AND DID NOT PLAY COMPUTER GAMES FOR LEISURE	181
T TEST: RELOCATION - PARTICIPANTS THAT WOULD AND WOULD NOT RELOCATE	181
T TEST: HOURS WORKED - 45 AND UNDER/ 46 PLUS HOURS PER WEEK	181
T TEST: INTENTION – PLAN TO STAY/ NOT STAY IN THE GAMES INDUSTRY IN THE NEXT 5 YEARS	182
T TEST: EMPLOYMENT STATUS - FULL OR PART-TIME WORKING.....	182
T TEST: AGE - 35 OR UNDER/36 PLUS	183
T TEST: LENGTH OF TIME IN THE INDUSTRY – 7 YEARS AND UNDER/ 8 PLUS	183
3.5 ANOVA’S	184
AGE ANOVA	184
GRADE REDUCED ANOVA	185
COUNTRY ANOVA.....	185
PROFESSIONAL IDENTITY ANOVA	189
LENGTH OF TIME IN THE INDUSTRY ANOVA	192
INTENTIONS IN 5 YEARS TIME ANOVA.....	192
PROMOTIONS ANOVA	194
RELOCATION ANOVA.....	195
EMPLOYMENT STATUS ANOVA	196
3.6 STRUCTURAL EQUATION MODEL (SEM).....	197
3.6.1 THEORETICAL FRAMEWORK	197
3.6.2 RESEARCH QUESTION AND MODEL	198
3.6.3 THE LATENT VARIABLES IN THE MODEL AND HOW THEY ARE MEASURED	199
3.6.4 MODEL EVALUATION.....	202
3.6.5 MODEL FIT (MODEL 1).....	202
3.6.6 MODEL FIT (MODEL 2: MODIFIED MODEL)	205
3.6.7 MODEL CHARACTERISTICS	205
3.6.8 MODEL ESTIMATES.....	205
3.6.9 DEVELOPMENTAL ROLES	207

3.6.10 NON-DEVELOPMENTAL ROLES.....	208
3.7 FACTOR ANALYSIS OF THE BSRI	208
CHAPTER 4: DISCUSSION	210
4.1 SUMMARY OF THE MAIN FINDINGS	210
4.2 SCCT FRAMEWORK AND THE PROPOSED MODEL.....	212
4.3 SEGREGATION IN THE GAMES INDUSTRY.....	217
4.3.1 GRADE	217
4.3.2 PROFESSIONAL IDENTITY	218
4.3.3 GAME PLAY	221
4.4 AGE AND GENERATIONAL DIFFERENCES	222
4.5 INDIVIDUAL DIFFERENCES AND THE ENVIRONMENT	223
4.5.1 CAREER MOTIVATION.....	223
4.5.2 PERSON-ENVIRONMENT FIT AND WORKPLACE SATISFACTION.....	225
4.6 IDENTITY IN A MALE DOMAIN	226
4.6.1 FACTOR ANALYSIS OF THE BSRI.....	230
4.7 THE SELF IN THE WORKPLACE	233
4.8 CAREER FACTORS.....	235
4.9 LIFE ISSUES	236
4.10 CULTURAL VARIATIONS	239
CHAPTER 5: CONCLUSION AND RECOMMENDATIONS	241
5.1 IMPLICATIONS FOR THE GAMES INDUSTRY.....	241
5.2 STUDY LIMITATIONS.....	245
5.3 FUTURE RESEARCH DIRECTIONS	247
5.3.1 FUTURE RESEARCH AND THE THEORETICAL FRAMEWORK	248
5.3.2 ISSUES OF ATTRACTION, IDENTITY AND RETENTION	250
5.3.3 DEMOGRAPHICS AND SEGREGATION.....	251
5.4 CONCLUSION	252
REFERENCES	256
APPENDICES	322
APPENDIX 1: WOMEN IN COMPUTER QUESTIONNAIRE	322
APPENDIX 2: PROMOTIONAL LETTER	326
APPENDIX 3: ADDITIONAL SEM TABLES	327

List of tables

Table 1.1 The earnings of game professionals in the UK by role and level	14
Table 1.2 The percentage of men and women working in specific jobs within the games industry.	15
Table 1.3 The number of applicants and successful applicants to all UK Universities at HND and undergraduate degree level in 2006 by subject and gender.	55
Table 1.4 The percentage of men and women (2005/2006) in different occupations who took computer science as their first degree.	58
Table 1.5 The percentage of men and women (2005/2006) in different occupations who took computer science at postgraduate level of study.	58
Table 1.6 The number and percentage of men and women who qualified in STEM subjects by gender in the UK, 2008	59
Table 1.7 SET occupations by gender and employment status in the UK, 2008	59
Table 1.8 The gender composition of computer science from primary and secondary school qualifications to various career stages at UK higher education institutions, 2006/07.....	60
Table 3.1 Age ranges.....	152
Table 3.2 Ethnicity	153
Table 3.3 Country of work.....	153
Table 3.4 Country of work by role.....	154
Table 3.5 Nationality.....	154
Table 3.6 Martial status.....	154
Table 3.7 Professional identity.....	155
Table 3.8 Reduced grade or level.....	156
Table 3.9 Reduced grade by area of work.....	156
Table 3.10 Number of hours approximately worked in an average week	157
Table 3.11 Employment status by area of work.....	157
Table 3.12 Educational level of participants.....	157
Table 3.13 Length of time in the games industry	158
Table 3.14 Number of times the participants had been promoted in the past five years	159
Table 3.15 The industries participants who have worked outside of games have worked in.....	159
Table 3.16 Computer games genres participants like to play in their leisure time ..	160
Table 3.17 High/low extrinsic motivation	160
Table 3.18 High/low intrinsic motivation	160
Table 3.19 Mean and standard deviations of intrinsic and extrinsic motivation	161
Table 3.20 High/low job fit.....	161
Table 3.21 High/low organisational fit	161
Table 3.22 Mean and standard deviations of job and organisation fit	162
Table 3.23 High/low job satisfaction	162

Table 3.24 High/low organisational satisfaction.....	162
Table 3.25 High/low total satisfaction	162
Table 3.26 Mean and standard deviations of the job and organisation satisfaction.	163
Table 3.27 High/low masculine gender role identity	164
Table 3.28 High/low feminine gender role identity	164
Table 3.29 High/low androgyny gender role identity	164
Table 3.30 Mean and standard deviations of the masculine, feminine and androgynous gender role identity.....	165
Table 3.31 High/low gender identification	165
Table 3.32 Mean and standard deviations for gender identification.....	165
Table 3.33 High/low self- efficacy.....	166
Table 3.34 Mean and standard deviations for self-efficacy	166
Table 3.35 High/Low self esteem	166
Table 3.36 Mean and standard deviations for self esteem	167
Table 3.37 Work life balance responses*	167
Table 3.38 Mean and standard deviation scores for all work life balance statements by country*	168
Table 3.39 Mean and standard deviation scores for all work life balance statements by age *	169
Table 3.40 Mean and standard deviation scores for all work life balance statements by grade*	169
Table 3.41 Career progression and promotion responses*	170
Table 3.42 Mean and standard deviations of the career progression and promotion statements by country*.....	170
Table 3.43 Mean and standard deviations of the career progression and promotion statements by age*	171
Table 3.44 Mean and standard deviations of the career progression and promotion statements by grade*.....	171
Table 3.45 Barriers to career progression responses*.....	172
Table 3.46 Mean and standard deviations for the career barrier statements by country*.....	172
Table 3.47 Mean and standard deviations for the career barrier statements by age*	173
Table 3.48 Mean and standard deviations for the career barrier statements by grade*	173
Table 3.49 The generations*	174
Table 3.50 Generational means*	174
Table 3.51 Correlations between variables	176
Table 3.52 Significant t test results for participants area of work and the measures in the study	177
Table 3.53 Significant t test results for participants with or without children and the measures in the study	177
Table 3.54 Significant t test results for participants in a developmental area of work with or without children and the measures in the study.....	178

Table 3.55 Significant t test results for participants in the UK and the USA and the measures in the study	179
Table 3.56 Significant t test results for participants in a developmental role in the UK and the USA and the measures in the study	180
Table 3.57 Significant t test results for participants who did and did not play computer games for leisure and the measures in the study	181
Table 3.58 Significant t test results for participants who would and would not relocate for a promotion and the measures in the study	181
Table 3.59 Significant t test results for participants who work 45 and 46 plus hours per week and the measures in the study	182
Table 3.60 Significant t test results for participants intending and not intending to stay in the games industry in the next 5 years and the measures in the study	182
Table 3.61 Significant t test results for participants who worked full and part-time and the measures in the study	183
Table 3.62 Significant t test results for participants aged 35 or under and 36 plus and the measures in the study	183
Table 3.63 Significant t test results for participants who had worked in the industry 7 years and under or over 8 years and the measures in the study	184
Table 3.64 Significant one-way ANOVA results between the age ranges of participants and the measures in the study	185
Table 3.65 Significant one-way ANOVA results between participants and the reduced grade categories and the measures in the study	185
Table 3.66 Significant one-way ANOVA results between the country of participants and the measures in the study	188
Table 3.67 Significant one-way ANOVA results between the professional identity of participants and the measures in the study	191
Table 3.68 Significant one-way ANOVA results between participants length of time in the games industry and the measures in the study	192
Table 3.69 Significant one-way ANOVA results between participants intentions to stay in the games industry and the measures in the study	194
Table 3.70 Significant one-way ANOVA results between the number of times participants had been promoted in the last 5 years and the measures in the study ..	195
Table 3.71 Significant one-way ANOVA results between participants relocation attitudes and the measures in the study	195
Table 3.72 Significant one-way ANOVA results between participants employment status and the measures in the study	197
Table 3.73 Goodness-of-Fit ($N = 450$)	202
Table 3.74 Maximum Likelihood Estimate: Regression Weights	203
Table 3.75 Goodness-of-Fit ($N = 450$) the modified model	205
Table 3.76 Sample means and standard deviations	206
Table 3.77 Standardized Regression Weights	206
Table 3.78 Goodness-of-Fit ($N = 320$)	208
Table 3.79 Goodness-of-Fit ($N = 320$)	208
Table 3.80 Goodness-of-Fit ($N = 130$)	208

Table 3.81 Total variance explained	209
Table 3.82 Bem BSRI original masculine/feminine scale characteristics	209
Table 3.83 Component matrix female participants	209
Table 3.84 Maximum Likelihood Estimate: Regression Weights	327
Table 3.85 Variances.....	327
Table 3.86 Maximum Likelihood Estimate: Regression Weights	328
Table 3.87 Standardized Regression Weights.....	329
Table 3.88 Variances.....	330
Table 3.89 Maximum Likelihood Estimate: Regression Weights	330
Table 3.90 Standardized Regression Weights.....	331
Table 3.91 Variances.....	332

List of figures

Figure 1 A traditional SCCT model.....	21
Figure 2 Hypothesized structural model based on the SCCT model shown in figure 1.	22
Figure 3 Hypothesized structural model based on the SCCT model shown in figure 1.	133
Figure 4 Hypothesized structural model based on the SCCT model in figure 1.....	198
Figure 5 Model of career influences	201
Figure 6 Modified model	204
Figure 7 Final model	207

Declaration of authenticity

This thesis contains no material which has been accepted for the award of any other degree or diploma in any University. To the best of my knowledge and belief, this thesis contains no material previously published or written by another person, except where due reference has been made.

J Prescott

Acknowledgements

I would like to thank all the game workers who took the time to take part in the study; both the pilot interviews and the main studies questionnaire. I would like to express my sincere thanks to my supervisors: Dr. Jan Bogg and Dr Paula Byrne. A special mention should go to Dr. Bogg for her constructive guidance and support throughout. I would also like to thank Dr Steven Lane for his statistical advice. To everyone involved, thank you.

Abstract

The computer games industry is dominated by men, both as developers and gamers. In 2006, only 12% of the UK's games industry workforce was female (Skillset, 2006), in 2009 this decreased to just 4% (Skillset, 2009). Studying women working in male dominated industries is critical in reducing occupational segregation and its impact on women. This thesis aimed to gain an understanding of the attitudes, gender role identity, person-environment fit, satisfaction, career motivations and career aspirations of women who have entered this male dominated industry. This thesis is based on an international sample of over 450 female game workers who occupy varying professional identities and grades within the industry. The sample included women who work in male dominated, developmental roles of game development and also women working in more traditional female dominated roles, non-developmental roles such as Human Resources (HR) and administration.

Using Structural Equation Modelling (SEM), a model of career influences was developed applying Social Cognitive Career Theory (SCCT) as developed by Lent et. al. (1994) as a framework. The overall model has numerous theoretical implications. For instance, the model expands the usage and applicability of a SCCT framework to women's careers, especially in regards to career aspirations and development. The model supports a number of hypotheses adding to the existing literature in a number of ways. For example, self-efficacy was found as being significantly related to person-environment fit and person-environment fit related to workplace satisfaction and career aspirations. Satisfaction was influenced by person-environment fit, attitudes towards women's career barriers and work life balance issues, but was surprisingly negatively related to career aspirations. Furthermore, the thesis advances SCCT through showing its usefulness as a tool for women's careers and through its use in investigating the careers of people already in a career in terms of advancement and development. Aside from the model of career influences, the study also developed a number of other research hypotheses investigating women working in a male domain.

The gender role identity of women in the games industry was looked at using the Bem Sex Role Inventory (BSRI) (Bem, 1974). Findings revealed that the majority of women had an androgynous rather than a masculine gender role identity as presumed based on the findings of previous research on women in ICT (Wajcman, 2007). A factor analysis of the BSRI revealed that female game workers loaded more onto the masculine than feminine component of the measure. For women in the games industry it would seem that the BSRI has changed in the 36 years since Bem's original study. A number of significant differences were also found between the participants, particularly between women working in the USA and UK. The games industry was found as being a good place to work in terms of satisfaction. Participants were highly motivated by both intrinsic and extrinsic motivations and they tended to have high job and organisational fit. However, despite the many positive findings working in the industry, many barriers prevalent within the wider ICT and SET sectors prevail. For example, like the wider ICT industry the female game workers in this thesis tended to be single, young and childless. There was also evidence that a long hours culture exists.

Introduction

'We need an icon that's not Lara Croft! We need our female real-life superstars to go to schools, be interviewed, be in the spotlight, and be exposed. We need initiatives sponsored by big publishers to unapologetically encourage women to enter the games industry, with finances, jobs and in-kind promotion.' (E-mail by Aleks Krotowski¹ in Haines, 2004).

Research on women working in the computer games/games industry² represents a new and varied area of research for investigating women's career development in new industries and male dominated organisations. Research on women working in the games industry is sparse. There is also a paucity of research on women's careers in new industries such as new media, of which the games industry is part. Research looking at women in the games industry which is both a new industry and a male dominated industry; under the umbrella of the wider ICT and SET sectors, was deemed as important in gaining a further understanding of occupational segregation as well as identifying possible ways of increasing women's participation in male dominated industries. The industry forms part of the creative industries sector as well as the wider ICT and SET sectors, viewed as a: *'young and rapidly changing technologically driven subsector of the creative industries with significant interactions with the design and software subsectors'* (Camicero et. al., 2008, p37).

This thesis explores women in the games industry in terms of their attitudes, motivations and career aspirations. This chapter provides the broad context and background to the research, discussing the literature on gender differences in playing computer games and facts about women gamers and game-workers. The rationale for undertaking the research is also considered, and the aims and objectives with an

¹ Dr Aleks Krotoski is an American broadcaster and journalist who writes about and studies technology and interactivity. In September 2006 she was named one of the games industry's 100 most influential women by NextGen.biz and in November 2006 she was named one of the "Top Ten Girl Geeks" by CNET.

² For the remainder of the thesis the computer games industry will be referred to as the games industry.

overview of the theoretical framework which the study is based on are presented in this chapter. In addition, the layout of the thesis will also be described.

Computer games have an interesting history, and are also referred to as video games or console games. They are played on a device specially made for game play called a game console, a personal computer or a mobile phone. The player interacts with the game through a controller, a hand-held device with buttons and joysticks or pads³. Video and sound are received by the gamer through a television, computer monitor or mobile phone. Examples of game consoles include Microsoft Xbox, Sony Play Station, Nintendo Wii and the handheld Nintendo DS. Computer games have become one of the most popular leisure activities for children and adults in Western and Asian societies (Hartmann and Kilmmt, 2006). Additionally, the games industry is a billion-dollar business and its products have become a major part of the media landscape. According to ELSPA (Entertainment and Leisure Software Publishers Association), in 2004 there were a staggering 20.8 million consoles and handheld game consoles in UK homes. In the last 10 years more than 335 million computer games and leisure software have been sold in the UK alone⁴. In 2009, computer games outsold films (including trips to the cinema and DVD sales) (Wallop, 2009).

The games industry has a pervasive impact upon popular culture which is influenced by, and influences other media and popular culture including TV, books and films. Despite this, the industry has received little attention from social scientists and there is a paucity of literature in the area. The industry is an important and growing industry with connections with other cultural sectors such as music and film (Johns, 2006). The games industry has accelerated from small firms and individuals programming in their bedrooms to an industry dominated by multinational hardware producers such as Sony and Microsoft (Johns, 2006). According to Johns, the industry has three distinct geographical areas North America, Europe and Japan; producing cultural products distinct to their geographical area. The greatest

³ With the more recent Xbox 360 Kinect, your own body becomes the controller. The 360 Kinect camera tracks your movement, recognises your voice, scans objects into games, and works with every Xbox 360.

⁴ ELSA Fact card downloaded 24th September 2008 from http://www.elspa.com/docs/Fact_Card_01.pdf

difference in the nature of games occurs between Japan and the American and European markets. The Japanese games industry is based on comic books, such as Manga, with the games sold in Japan being produced by Japanese producers whereas the other two markets interrelate more (Johns, 2006).

It is suggested that gaming might be an initial introduction for children to digital technologies. In turn, developing their confidence and skills in their usage; leading to an increased utilisation and interest in a career in computer science and information technology (Brand, 2007). Although there are some popular discourses which portray computer games as negative, the converse can also be noted, that playing computer games can be associated with some positive outcomes. For example, research has found that in general game players are more likely to be academically successful, go to University and have better employment prospects (Harris, 2001). Playing games has also been found to help children learn about technologies, mathematics and to play with others (Brand, 2007).

Gender differences in playing computer games

Despite the potential benefits of playing games, a substantial gender difference in computer game involvement has been observed in many countries including America, the UK and throughout Europe. For example, studies have found gender differences in interests in computer games, confidence in computer games and the amount of time spent playing computer games (Bonanno and Kommers, 2008; Angelo, 2004; Krotoski, 2004; Natale, 2002; Schott and Horrell, 2000). The image of computers and computer games has also been found to be gender specific, with research finding that children of both genders perceive computer users as male (Mercier, Barron and O'Connor, 2006). Men are also considered more computer literate and computer confident than women, due to playing computer games (Natale, 2002). In contrast, research by Clegg and Trayhurn (2000) found no evidence of a gender difference in the confidence and skills of using computers. However, they did find differences between the women and men in their study in respect to home computer use, with women not using computers as much in the home, compared to men who used them more frequently and from childhood in the form of computer games.

More recently, Bonanno and Kommers (2008) developed a measurement for attitudes towards computer gaming which had four components; affective, behavioural, perceived control and perceived usefulness. The authors found a number of gender differences with regards to each of the four components and general attitude towards gaming. They found males to be less apprehensive, more confident with game controls and navigating through games and much more in control of the computer or console than females. Males in the study felt games relaxed them, whereas females did not tend to share this belief. The males also tended to have a more positive attitude towards gaming than females. Through playing games the authors concluded that males are more likely to regard computers as toys whereas females are more likely to view computers as a tool for work (Bonanno and Kommers, 2008). Similarly, Kelan (2007) found that viewing technology as a toy was associated with masculinity and as a tool with femininity.

In contrast to Bonanno and Kommers findings, Oosterwegel et. al. (2004) found no sex differences in attitudes towards computers for 12/13 year olds. However, they did find, like Bonanno and Kommer, that both boys and girls in the study thought that boys used and enjoyed computer games more than girls and that girls used and enjoyed word processing more than boys. Similarly, Chan et. al. (2000) found that despite Canadian female students spending as much time using computers as their male counterparts; females used computers for e-mail and work assignments and spent less time playing games, programming or surfing the internet than male students. From these studies it appears there is a gender difference in the usage of computers for different tasks and goals.

Previous research has also found a number of gender differences with regards to interest in computer games. For example, Angelo (2004) found that women play more 'casual games'⁵ such as Tetris and Solitaire or simulation games such as the Sims. The most popular game genre in the UK, for all gamers, is puzzle and quiz games, followed by action/adventure (Oxford Economics, 2008). The casual game

⁵ The term "casual games" is used to describe games that are easy to learn, utilize simple controls and aspire to forgiving gameplay.

association in 2007 reported that the casual games industry is worth \$2.25bn, with men making up 48% of casual game players and women 52%; suggesting a more equal gender balance than Angelo suggests. Research in Malaysia also found gender differences in game genres with women preferring puzzle games and men preferring racing games (Yong and Tiong, 2008). Other research disagrees with this gendering of game genres. Through participant observation of gamers aged 20-35, Yates and Littleton (2001) found women had a wide range of gaming interests that were not always tied to gendered expectations. However, the difference in findings could be due to cultural factors.

Differences with regards to the way games look have also been given as a reason in game-play differences between the genders. For instance, Ziemek, (2006) suggests that female gamers prefer 2 Dimensional (2D) games and male gamers 3 Dimensional (3D). Ziemek found that in order to appeal to a female market, games need to be fun, easy to understand and have dreamlike graphics. In order to appeal to male gamers, games need to be fun, challenging and have realistic graphics⁶. However, Ziemek's study was conducted on a small sample (n=34) of 13-14 year olds so may not be representative of the adult population. Denner and Campe (2008) developed the Girls Creating Games (GCG) programme in order to help increase interest, confidence and skills in IT for 126 girls aged 11-14 year olds in America. The girls had to work in pairs to create a computer game with an interactive story structure, which limited the games they could make. The authors found that girls made games with three main themes; competition and conflict, real-world applications and challenges to gender stereotypes. The girls tended to like to solve real world problems in real world settings. Their games also tended to have bright vivid colours and they won through achievement rather than competition. Most of the games allowed the player to choose the gender of the character and they found girls seek to explore different identities and experiment with different notions of femininity. Similar findings were found by Heeter et. al. (2009) in a study of 5th and 8th graders in America. Heeter et. al., found that the designer's gender did influence the design outcome of games. Through mixed methods research, the results suggest that girls expected that they would find the girl-designed games significantly more

⁶ Accessed 18th September 2008 at <http://kotaku.com/gaming/research/girls-prefer-2d-games-to-3d-games-335041.php>

fun than the boy-designed games and vice versa for boys. A significant finding from the study is that girls tended to design games with both girls and boys in mind, whereas boys designed for just boys. Their findings support the first half of the 'virtuous cycle' as proposed by Fullerton et. al. (2008), in that, games designed by women are more likely to attract women than games designed by men. Fullerton et. al. (2008) argue that more women would be interested in games if more games existed that girls and women liked to play and if work environments could be found that were more supportive of their values and work styles. The authors refer to this as the 'virtuous cycle': *'making games that appeal to women and girls attracts more women to work on games, resulting in the creation of more games that appeal to women and girls'* (p141). Researchers and the games industry still need to explore whether more women playing games will indeed result in an increase in women being attracted to the industry as a career.

The content of games is often viewed as a reason why games do not appeal to women. For instance, the highly sexualised representations of women in games (Graner Ray, 2004) and the predominance of fighting as a central game feature have been considered as unappealing to women (Hayes, 2007). Hartmann and Klimmt (2006) found that a lack of social interaction, followed by violent content and sex role stereotyping of game characters were the main reasons why German women disliked computer games. Recent research has found that over 50% of games in most genres have playable female characters⁷ (Divinch, 2008). The genre with the highest percentage of female characters is casual games⁸ with shooter games⁹ having the least (Divinch, 2008). Perhaps a major factor as to why women gamers make up a large proportion of the casual games industry. Through content analysis of twelve games, Martis and Jansz (2004) found that the number of female characters is increasing in games compared to earlier work (Provenzo, 1991; Dietz, 1998), and

⁷ Playable female characters mean gamers can play as a female within a game.

⁸ The term "casual games" is used to describe games that are easy to learn, utilize simple controls and aspire to forgiving gameplay.

⁹ Shooter games are a subgenre of action game, which often test the player's speed and reaction time. Because shooters make up the majority of action games, it is a fairly wide subgenre. It includes many subgenres that have the commonality of focusing on the actions of the avatar using some sort of weapon. Usually this weapon is a gun or some other long-range weapon". A common resource found in many shooter games is ammunition.

with some females in the leading role (i.e. Lara Croft in Tomb Raider). However, despite the increase of female characters in games, Martis and Jansz found that whatever their role is, the physical representation of women is just as stereotypical and hyper sexualised as previous research suggests (Beasley and Standley, 2002). Looking at the representation of history within games, Schut (2007) found that computer games tend to result in stereotypically masculine presentations of history, which may also not appeal to a female audience. One reason why women may not be adequately represented in games is suggested to be the prevalence of the I-methodology¹⁰ in game designs (Faulkner and Lie, 2007). According to Faulkner and Lie (2007), designers who are usually young or middle aged men, make what they view as interesting and when designing for girls/women they tend to build on stereotypical gender differences.

Gender differences have also been found to exist in the amount of time available to play games. For women, due to their domestic responsibilities (also gendered) this tends to take precedence over their leisure time; they play games less (Schott and Horrell, 2000). This view is also supported by Krotoski (2004), who puts forward that women's game choices reflect their time limitations. In that, women tend to prefer games which are easy to master and do not require a great amount of negotiation with a controller. Women also tend to choose games that reflect their tendency to use technology in order to learn new skills (Krotoski, 2004). Lack of time could be the main reason as to why women tend to play more casual games as Angelo (2004) asserts.

There are, therefore, a number of gender differences in the domain of computer games. Despite these gendered differences, Hayes (2007) argues that computer games are contexts for experimentation with gendered identities and that the complexity of people's identities should be taken into account when looking at women in gaming. Hayes puts forward that an interplay of gender, personal histories and cultural factors will lead to better insights into how games may serve as spaces for the development of new forms of gendered identity.

¹⁰ I-methodology is a term used to refer to designers designing with themselves in mind- things they will like.

Facts about women gamers

The games industry is one of the fastest growing sectors of the 21st century. In 2004, the industries worldwide worth stood at 20bln Euros for software and hardware (ISFE, 2004, see Krotoski, 2004). More digital games are sold in the US and UK than books (Bryce and Rutter, 2003). The estimated turnover of the UK computer games industry in 2008 was £625 million, with a direct contribution to UK GDP (Gross Domestic Product) of approximately £400 million (Oxford Economics, 2008). 48% of the 26.5 million UK computer games player base is female (Oxford Economics, 2008). Women are the fastest growing group of computer game consumers, making up an estimated 38% of USA players (IBISWorld, 2008)¹¹. According to the Entertainment Software Association (ESA), in 2004, 69% of American heads of households played computer games, with 83% aged 18 and over, with the average age being 40. In America, 62% of males and 38% of females play computer games; 42% of online gamers are female. In America, the gender time gap spent on game play is narrowing with men averaging 7.6 hours of play per week and women 7.4 hours.¹² According to an Entertainment Leisure Software Publishers Association (ELSPA) white paper (Krotoski, 2004), in 2004, 27.2% of all active gamers in the UK were women. These female gamers have an average age of 30-35 years old, playing on average 7.2 hours per week. Internationally, women in the UK represent a slightly lower proportion of gamers (27.2%) compared to women gamers in America (38%), Japan (36.8%) and Korea (65.9%).

Gaming occurs in public and private spaces, as well as across networks, the biggest being the internet. Gaming space has been viewed as a gender issue. Bryce and Rutter (2003) looked at the social organisation of computer gaming and the way in which gaming is a gendered leisure activity. They suggest that all gaming spaces are still very much male domains, but more specifically, public gaming spaces. This, they argue, is due to the stereotypical view of gamers being male; acting as a psychological barrier to women's participation in public gaming. A study with Taiwanese students supports Bryce and Rutter's findings, suggesting that girls access

¹¹ Accessed 30th October 2008 <http://www.ibisworld.com/pressrelease/pressrelease.aspx?prid=133>

¹² Accessed 4th August 2008 http://www.theesa.com/facts/gamer_data.php

to public leisure space is restricted (Lin, 2005). For some women, computer games can be an important social activity. Mobile phones offer women a less restricted and a more accessible leisure activity than other platforms and spaces, which are viewed both culturally and by the gaming industry as belonging to men (Crawford and Gosling, 2005). More recently social networking sites such as facebook have been viewed as paving the way for the next generation of hard core gamers¹³, especially amongst women, allowing games to be played with friends across the site (Brathwaite¹⁴, 2010). Social networking sites are viewed as another viable platform which allows women 'space' to play games.

Royse et. al. (2007) identified three levels of game consumption by female adults. Power gamer, where gender and technology are highly integrated and women enjoy multiple pleasures from gaming; moderate gamers, who play games to cope with their real lives and enjoy controlling the gaming environment or use gaming as a distraction from life; and finally, the non-gamers who view games as a waste of time. Massively Multiplayer Online Role Playing Games¹⁵ (MMORPG's) have a UK female majority of up to 60%, most of whom are over 30 and women are also the main players of mobile phone games and online simple format games (Krotoski, 2004). MMORPG's have attracted players from both genders through games such as second life and EverQuest as they offer a variety of play styles and avenues for self expression. Taylor (2003) suggests women enjoy these games within social communities as they allow the opportunity to play out different aspects of self-identity in a safe environment, allow for exploration with others as a team and they support the pleasure associated with success. Taylor (2003) explored the pleasures women derive from MMORPG's and found the relationship between gender and computer games as complex. Taylor studied women who play EverQuest, one of the most popular MMORPG's with a subscriber base at the time of Taylors study of

¹³ Hardcore gamer is a widely used term applied to describe a type of gamer who prefers to take significant time and practice on games, with many hardcore gamers priding themselves on mastering the rules or use of a game.

¹⁴Women in games: from famine to Facebook http://www.huffingtonpost.com/brenda-brathwaite/women-in-games-from-famin_b_510928.html Accessed 24th November 2009.

¹⁵ Massively multiplayer online role-playing game (MMORPG) is a genre of computer role-playing games in which a very large number of players interact with one another within a virtual game world.

around 430,000; of which approximately 20-30% are female. She found women enjoyed many of the aspects to games previously viewed as undesirable to women, such as violence and competition (Hayes, 2007). Taylor found women enjoyed not just the community and socialisation aspect of the game, but also many other aspects such as identity play, mastery and status, exploration, and team sport and combat. Women also gained enjoyment from identity play and the role-play involved in developing their avatars, which may or may not reflect aspects of themselves. Women enjoyed mastery and status through achieving personal goals, of gaining skills and attaining levels through competition with oneself and other players. Exploration was found enjoyable through navigating in a space where women are no more threatened than their male counterparts and team sport and combat was deemed enjoyable through using violence to express their mastery of the game. Similarly, Cunningham (2000) argues that women like to play violent and aggressive games since it enables them to do so in a safe context. It could also be that women can be violent and aggressive. Pelletier (2008) looked at how game play and game design enables players to construct their identities, with a sample of UK students. The study found that gender and gaming is a function of context. People make sense of games dependent on context, such as where and why they are playing, discussing or making games. Pelletier suggests that: *'we need to understand how games are involved in social relations and peoples sense of self'* (p158).

Much of the research on women and computer games has criticised the representation of women within the computer games, with their hyper sexualised representation of women (see Graner Ray (2004) for an overview of the issues). Taylor (2003) argues that women want more choice in how their female avatar will look, which does not necessarily mean they do not want them to appear sexy, but sexy without exaggerated body parts and body parts showing. Although male bodies portrayed in computer games are also exaggerated they are not exaggerated in a sexual manner, but perhaps more symbolic of strength (symbolised through big chest and biceps) whereas, large breasts have a fairly one-dimensional meaning (Taylor, 2003). Taylor goes on to express the need for game designers to be more aware of the impact the body has in society and that: *'they [bodies] become not only places in which we express our identities but, because they are socially constructed, offer or deny particular formulations'* (p38). It has been suggested that what women gamers want is more

gender neutral games (Case, 2004). Culp and Honey (2002) put forward that the industry should create:

'less gendered game worlds' that go beyond the dichotomy of gender-focused versus genderless games but allow the player to define how gender is enacted' (Culp and Honey, 2002 in Denner and Campe, 2008, p131).

However, it is not just female gamers that are seen as a minority by the games industry, as Pearce (2008) illustrates. In a study of gamers over 40, Pearce (2008), suggests that the needs of older gamers is also being ignored by both the mainstream games industry and the game press. Pearce's study found that women over 40 are the fastest growing gamer population. The study of 300, mostly American participants, found a number of interesting things about the over 40 gamer. For instance, the majority are married with children in the home and the PC is the most popular platform. The most popular games for the over 40 gamer being those that tell a story with a sense of escape to another world and they spend between 10 to 40 hours per week playing games instead of watching TV or doing other leisure activities.

The literature suggests women are a huge gaming market with the potential of becoming an even larger one. Some of the games industry is recognising that there is a massive untapped market. For example, Japanese game giant Nintendo has revealed its strategy of attracting the 'non-gamer' market such as women and older gamers through the introduction of the portable DS, with games such as Brain Age and the Wii console with its 'games for all' focus. The Wii is even beginning to make an appearance in nursing homes in an attempt to reach a wider audience (Taub, 2006). Fron et. al. view the Wii console as important in appealing to a wider and more diverse audience as: *'the Wii may be as significant as the Model T Ford in creating videogames for the people'* (Fron et. al., 2007; p316).

It would seem there is possibly a large gap which exists between the public's perception of computer games and what the research suggests. Jenkins (2008)¹⁶ reported eight myths about computer games which included that children are the

¹⁶ Accessed 23rd August 2008 <http://www.pbs.org/kcts/videogamerevolution/impact/myths.html>

primary market for computer games, almost no girls play computer games, computer games are not a meaningful form of expression and computer game play is socially isolating. The literature reviewed tends to confirm that these four myths of the eight put forward by Jenkins are indeed myths.

Game-workers

'Game makers possess both the most interesting technology and the distribution channels to truly lead the direction of the future' (Flanagan, 2003, p359).

The above quote by Flanagan (2003) illustrates how important it is for women to become more involved in the making of computer games. The games industry is a relatively young industry dating back approximately three decades (Green, Miles and Rutter, 2007). Within Europe, Britain has the highest number of games development studios, with approximately 8,000 employees of the 13,250 across Europe (ISFE, 2004, see Krotoski, 2004). With more recent figures suggesting that the UK games industry has 9900 employees (Oxford Economics, 2008). Just over two thirds of these people work in games development, with the remainder focused on publishing, marketing and other core business functions. It is one of the fastest growing sectors in the economy and the best selling games turn over sums comparable to hit films and music titles (Haines, 2004). The industry is made up of a number of specialism's including development, production, design, level design, audio design, art and testing (Green, Miles and Rutter, 2007).

Looking at the professional identity of game-workers, Deuze, Martin and Allen (2007) found that game-work tended to favour young and unattached males, due to its long hour's culture and the potential need to relocate. The long hour's culture within the gaming industry has been acknowledged by the International Game Developers Association (IGDA) Quality of Life White Paper (2004). The paper reports that three out of five developers work 46 hours or more in a normal working week and workers can spend anywhere from 65 to 80 plus hours per week at crunch time. Long hour's is an issue that stems throughout the ICT sector (Valenduc et. al., 2004, WWW-ICT report by the European Commission). According to the Oxford

economic report (2008) relocation is also an important issue due to the possible decline of UK games companies and other expensive countries in favour of cheaper countries. For instance, the report suggests that games companies in Canada and Singapore have been targeting individuals from more expensive countries to relocate.

A report by the online games magazine, MCV (2008) suggests that the percentage of women within the games industry in core creation or developmental roles is around just 6.9%. More recent figures by Skillset (2009) found that women represent 4% of the game industries workforce (compared to 46% of the whole economy)¹⁷, a decrease from 12% in 2006. Less than 4% of computer games employees are from an ethnic minority background. This is lower than the 7% of ethnic minority individuals in the working age population across the entire UK economy¹⁸.

The lack of women and ethnic minorities within the industry has been acknowledged as a possible solution to the skills shortage within the industry. According to Matthew Jeffery, Head of European Recruitment at Electronic Arts, skills shortages were becoming more common in the gaming industry and measures had to be taken to bring in more new talent, stating:

*'Games companies need to broaden out their recruiting scope and attract talent from other new industries and seduce more diverse groups into game teams, particularly women and ethnic minorities.'*¹⁹

Disabled people are also underrepresented in the games industry with only 1% of individual's classifying themselves as disabled according to the terms of the Disability Discrimination Act (DDA). One strategy of increasing the diversity of games is to increase the diversity of those involved in all aspects of game design and production. It is argued that what the games industry needs is to not only to increase its diversity, but also to change its organisational structures in order to maintain a more diverse workforce (Consalvo, 2008).

¹⁷ Labour Force Survey, 2004

¹⁸ Labour Force Survey, 2004

¹⁹ Accessed 23rd August 2008 http://www.skillset.org/skillset/press/releases/article_6286_1.asp

There is also evidence that a gender pay gap exists within the industry, in that, women earn on average £7,126 per year less than men (Krotoski, 2004). In America, according to an IGDA (2004) report, women earn an average \$9000 less a year than their male counterparts. However, more recent research by the online computer games magazine, MCV in January 2009²⁰, found that, on average women in the games industry earn £2000 more than their male counterparts. The survey was conducted with 528 UK games industry professionals from all sectors including retail, publishing, HR, marketing and development. According to the MCV survey, women within the games industry are likely to be working in publishing, marketing, and PR, retail and distribution services. MCV stated that only 6.9% of developmental roles are filled by women again highlighting the low number of women in core content creation roles. The following table shows the average earnings of games professionals in the UK according to the survey.

Table 1. 1 The earnings of game professionals in the UK by role and level ²¹

	Development Programmer	Artist	Designer	Producer
Junior	£18-25k	£18-21k	£18-21k	£18-27k
Middle	£20-35K	£20-27k	£20-28k	£28-40k
Senior	£35-50k	£27-35k	£25-35k	£35-60k
Lead	£40-60k	£38-55k	£38-55k	£45-80k

MCV (2008)

Another gender difference within the games industry is the disproportionate position of women in senior roles. Only 0.4% of female employees in the UK's industry are in lead, director or management positions, whilst 1.2% of male employees hold these jobs (Krotoski, 2004). Research by Haines (2004) on the other hand, found that nearly a quarter (23%) of senior positions within the twenty UK games companies in her study, were filled by women. However, these were more often in managerial and marketing roles rather than direct game development roles.

According to a 2005 report conducted by IDGA (Gourdin, 2005), the average age of a game developer is 31, 80% are educated to University level or above and the

²⁰ Accessed 15th January 2009 <http://www.mcvuk.com/news/32964/Women-earn-more-than-men-in-the-UK-games-industry>

²¹ Accessed 26th January 2008 <http://www.mcvuk.com/news/29399/Industry-salary-survey>

average years within the industry is 5.4 (Gourdin, 2005). The games industry forms parts of the UK's 'knowledge economy' due to the high level of skills game developers have (Oxford Economics, 2008). The industry also employs a high number of educated employees. According to the Oxford Economics report, in 2008, 69% of the UK industries employees were educated to at least degree level, in comparison to 20% of the UK working age population in the same year. According to the IDGA (2005) when dividing job descriptions by gender, the only category that comes close to parity is that of 'operations/information technology/human resources' (Table 1.2). However, male workers heavily dominate most of the core content creation roles such as writing, programming, design, production and art, as can be seen from table 1.2 below.

Table 1. 2 The percentage of men and women working in specific jobs within the games industry.

Job role	Males %	Females %
Ops/IT/HR	53%	47%
Writing	70%	30%
Mkt/PR/Sales	75%	25%
Production	79%	21%
QA	87%	13%
Executive	88%	12%
Visual Arts	89%	11%
Design	90%	10%
Audio	90%	10%
Programming	95%	5%

This supports earlier research conducted in the North West of England by Haines (2004), who found that the majority of women in the games industry work in managerial, administrative, marketing and PR roles; with 73% of women working in games, working outside the main jobs of creating games. Haines research found that only 2% of programmers were female, 3% worked in audio, 5% were game designers, 8% production staff and 9% were artists. Women within the industry therefore have little voice in the content, interaction styles, character representation and the reward systems involved in games. All of which affects what is created and how games are perceived (Flanagan, 2005). With regards to the wider ICT (Information and Communication Technology) and SET (Science, Engineering and Technology) sectors it has been observed that women tend to work in the softer and less technical areas such as design, rather than the more technical areas such as coding (Poggio, 2000; Panteli et. al., 2001). This appears to also be the case within the gaming industry.

Research has found a number of reasons why women are underrepresented in the games industry, especially in the developmental roles. Consalvo (2008) conducted research using IGDA's 2004 quality of life survey of 994 participants of which, 7.1% were female. Consalvo also conducted in-depth interviews with 10 female game developers. The main findings of the research tended to centre on crunch time and long hours, with crunch time being viewed as the biggest challenge to women in the industry. Crunch time within the games industry refers to when a game is due to be released; it is a notorious time for extremely long hours. Crunch time was seen as being ingrained in the work culture, with passion viewed as the main reason as to why they do the long hours. Consalvo suggests that women, like their male counterparts, also have a passion for playing games. It is this passion which although viewed as a necessity to work in game development, may in turn deter women not interested in playing games from entering the industry. Consalvo viewed passion as problematic in that: *'the ideal worker is constructed as someone possessing a 'passion for games' and that passion is used to help maintain work practices that may ultimately kill the passion'* (p186).

Graner Ray (2004) put forward that one of the reasons why the games industry may not appeal to women is due to the portrayal of female avatars. If a company portrays female avatars in a demeaning way, potential applicants to that company may assume females will be treated in a demeaning way within the workplace. Graner Ray goes on to say that 'booth babes'²² and sexually orientated themes at the numerous professional games gatherings and conferences suggest the industry is for *'boys only'* (p150).

Game design teams that have more women in key design and production roles have produced products women enjoy. For example, Maxis-makers of The Sims which is estimated to have between 40-50% female player base have a workforce of 50% female designers and 40% female producers. The Sims development team has more women than average teams (Fullerton et. al., 2008). Another example is Singstar, which is a game that is social, and competitive. Singstar has sold 15 million units, has

²² Booth babes are scantily clad/sexily dressed females hired to hand out flyers and entice people to individual game stands at games conferences.

a player base of approximately 60% female, and the development team is 33% female with a female executive producer (Bozek, 2008).²³ Some women are being recognised for their achievement within the industry. In 2004 the first Interactive British Academy of Film and Television Award (BAFTA) for outstanding new talent was awarded to Paulina Bozek, the producer of Singstar (Krotoski, 2004).

As games become increasingly more popular and the games industry grows, games courses are also growing throughout Universities; however they tend not to be appealing to women. Only 5% of current games students are women (Haines, 2004). Haines suggests that women are unaware of the potential opportunities within the games industry. The academic route is viewed as beneficial to women in order for them to break into the male domain of the games industry (Fullerton et. al., 2008). According to Fullerton et. al. (2008) women could benefit from a University background in games as it may enable them to develop skills, confidence and explore their own creative interests and insights in game design in an academic environment before breaking into the games industry. They also acknowledge that women do not have to be hard core gamers in order to break into the industry via an academic route (Fullerton et. al., 2008). However, David Braben, boss of UK developer, Frontier has criticised University games courses. Braben suggests that the courses are: *'failing students and the industry because they are teaching skills that are between five and ten years out of date.'*²⁴

There has been little research conducted on women who work in the games industry with the exception of Haines (2004), Krotoski (2004) and more recently Consalvo (2008). Through a survey and interviews with female game workers, Haines (2004) found that what women in the industry wanted mostly was more encouragement and awareness for young girls to enter the industry and develop a career in gaming. Haines also found that similar to other working environments such as academia and the NHS, women wanted flexible working hours, mentoring, more role models, more women in senior positions and benefits of interest to women such as childcare as well as more games being developed women like. It should also be acknowledged that

²³ Bozek, P. Keynote speaker day 1 of the Women in Games 2008 conference, 10-12 September 2008.

²⁴ Accessed 23rd August 2008 http://www.gamesindustry.biz/content_page.php?aid=30008

men would also benefit from human resource policies which improve the workplace environment and increase employees work life balance as well as women.

The current study

In an extension of the Breaking Barriers research program for women in science careers,²⁵ this research aims to better understand the experiences of women in non-traditional working environments. The industry of focus is computer game development since it is male dominated and a relatively young industry, dating back approximately three decades, in contrast to the established science and health care professions. Preliminary research findings for this thesis from a qualitative pilot study of thirteen female game workers indicated that the industry has a strong masculine work environment and therefore not all women would enjoy/feel comfortable in such an environment. Preliminary findings also revealed that women want to blend into the male environment and hide their femininity/gender identity. Women also viewed the industry as gender neutral. However, this apparent gender neutrality may in fact be discriminating against women and warrants further research. This thesis will be looking at women working in the games industry; primarily working in the production of games via an online questionnaire, investigating the career aspirations, motivations and attitudes of women within the industry. The studies main aim is to develop a model of career influences using Structural Equation Modelling (SEM). The research will also gain a further understanding of the types of women who enter and are successful within this industry. This may help the industry recruit and retain more women; as well as provide a fresh insight to career development theories of women working in male dominated occupations within a new occupation; an occupation which has developed primarily since the introduction of the Sex Discrimination Act, 1975²⁶.

²⁵ www.liv.ac.uk/breakingbarriers

²⁶ The Act was established to protect men and women from discrimination on the grounds of sex or marriage. The Act also established the Equal Opportunities Commission (EOC) whose main duties were to work towards the elimination of discrimination, to promote equality of opportunity between sexes and to keep under review the workings of the Sex Discrimination Act and the Equal Pay Act, 1970.

Social Cognitive Career Theory (SCCT) developed by Lent et. al. (1994) will provide a framework for the structure of the research. SCCT focuses on the connection of self-efficacy, outcome expectations, personal goals, interests and environmental factors that influence an individual's career choice. SCCT proposes that career choice is influenced by the beliefs the individual develops and refines through four major sources: a) personal performance accomplishments, b) vicarious learning, c) social persuasion and d) physiological states and reactions. How these aspects work together in career development is through a process in which an individual develops an expertise/ability for a particular activity and meets with success. This process reinforces one's self-efficacy or belief in future continued success in the use of this ability/expertise. As a result, an individual is likely to develop goals that involve continuing involvement in that activity. With regards to career development it is interesting to understand how these four sources are affected when women work in a male dominated occupation. For example, how is vicarious learning implemented in an environment with few female role models? How does the male dominated environment impact and influence women in terms of job satisfaction, person-environment fit and career motivation? Mayrhofer et. al. (2005) suggest that career aspiration is a form of self-selection since individuals self select success in a field dependent on personal strengths and weaknesses. Therefore, career aspirations are particularly important to consider for women in male dominated occupations since the environment and how individuals feel and are made to feel within that environment can determine the extent of their career aspirations.

SCCT is a dynamic theory concerned with situation-specific aspects of people and their environments. This differs from trait like theories such as that proposed by Holland (1973) which suggests attributes remain fairly constant. SCCT requires domain specific measures, which in the case of the current study is the workplace/career/occupation. According to Lent and Brown (2006) there are four basic outcomes of SCCT; academic or vocational interest, choice content, performance outcomes and satisfaction outcomes. They suggest that SCCT can be used to relate to other criteria but it may be inappropriate to frame the study as a test of SCCT hypotheses. They suggest that:

'this is not to deny that there may be valuable opportunities to extend SCCT to a new domain or dependent variable of interest, in such cases, the objective may more accurately be portrayed as examining the theory's range of applicability rather than testing the validity of its formal hypotheses per se' (Lent and Brown, 2006, p22).

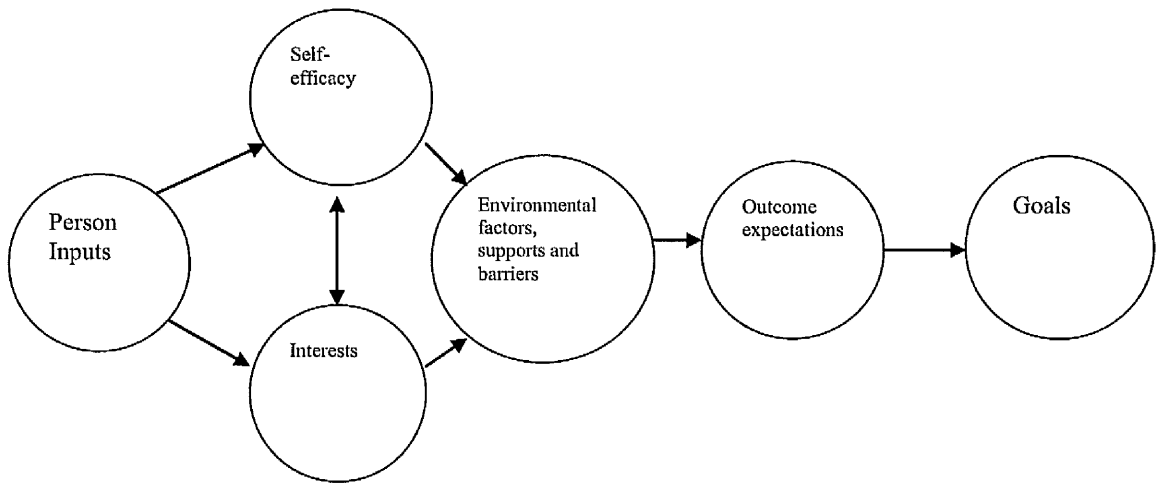
This thesis would like to expand the usage and applicability of SCCT, to determine if the theory is a useful framework for examining career aspirations once a person has embarked on a career path. Career aspirations have the potential to fit within SCCT theory by expanding the theory to look at career development. Typically SCCT is used to look at the career choice or academic choice of predominantly student populations. It has also been used to illustrate why women do not choose certain disciplines of study and therefore career. This study intends to extend SCCT to look at its usage as a career development theory for adults already in a career. The thesis therefore differs from the original use of the theory in a number of ways. Firstly, by looking at women who are already in a male dominated career; secondly, it will utilise the theory to look at the actual (self-rated), rather than perceived performance and satisfaction outcomes, which in turn are related to career aspirations. Finally, the study is also unique in that it would also like to explore how SCCT may be used for people already in careers to evaluate aspirations, and satisfaction. In addition, the study also proposes to extend the traditional SCCT model to develop a model of career influences.

Measures used in the study (thesis) and the SCCT framework

Self-efficacy is measured via the occupational self-efficacy measure (Rigotti, Schyns and Mohr, 2008). With regards to outcome expectations within the current study outcome expectation is not relevant. It is proposed that actual outcome is more appropriate in the thesis as opposed to outcome expectations, as the women are already active in a career. As such, outcome can be measured through satisfaction. Goals within this study are aspiration's measured by attitudes towards career progression and promotion (aspirations). Interests in the study are reflected by the fact they work in games and as such, interests are not directly measured in the model.

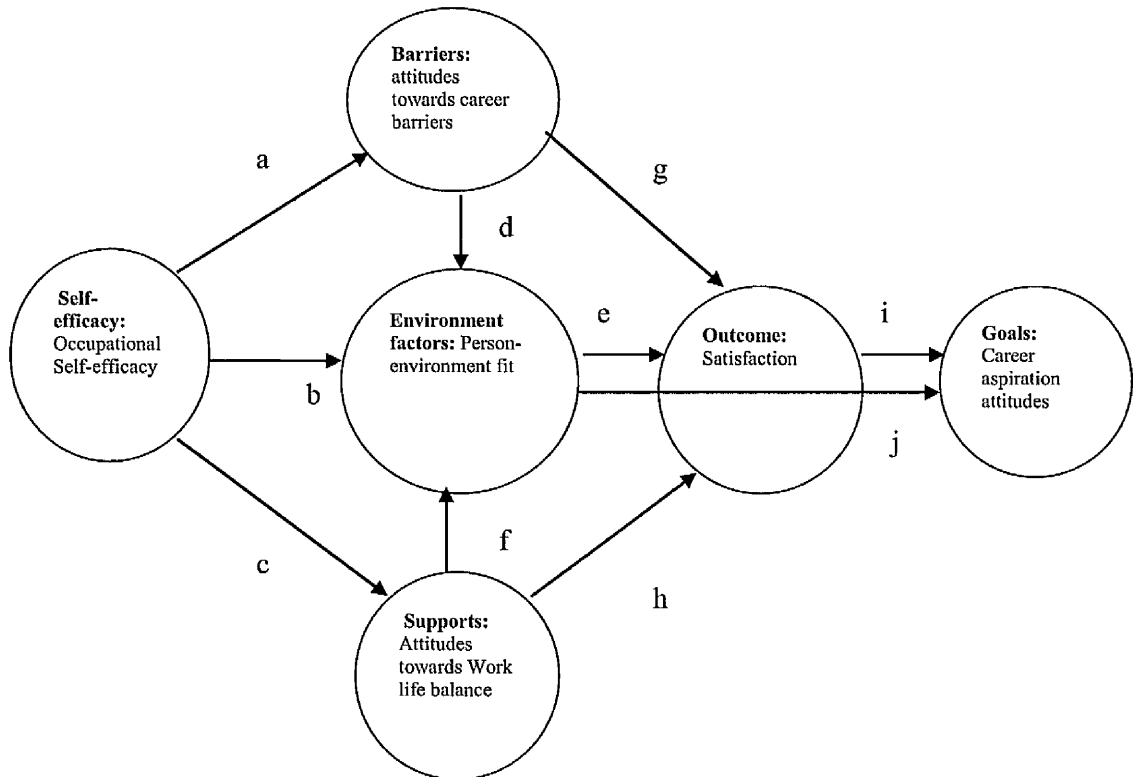
Environmental factors are measured through person-environment fit, whereas barriers and supports are measured through attitudes towards barriers to women’s career progression, and attitudes towards work life balance issues. The relationship between each variable as proposed by a traditional SCCT model is shown in figure 1.

Figure 1 A traditional SCCT model



The thesis intends to develop a model of career influences, examining the range, usage and applicability of SCCT, as well as gain a further understanding of women in a male dominated work environment and new industry. Figure 2 shows the current studies hypothesized model based on a SCCT framework and the relationship between the variables.

Figure 2 Hypothesized structural model based on the SCCT model shown in figure 1.



Notes: The letters next to each path correspond to the respective hypotheses letters.

Thesis layout

Chapter one presents the literature review. This chapter will discuss the relevant literature and previous studies in the areas of gendered workplace segregation; stereotypes and attitudes; science engineering and technology; career development theories and occupational choice; individual differences and the environment; identity; the self, career and gender issues; career factors; life issues and cultural and generational differences. The aims and hypotheses are presented at the end of this chapter. The next chapter discusses the methodology of both the pilot and main study; including the studies design, sampling, survey design and distribution. Chapter three discusses the results. This chapter starts with the descriptive statistics, the t-test analysis, the ANOVA's undertaken, the structural equation model and the factor analysis of the Bem sex role inventory. Chapter four presents the discussion section

and discuss the study findings. Finally, chapter five will discuss the study limitations, future areas of research and study conclusions.

Thesis objectives

Men dominate the computer games industry, both as developers and players of games. This thesis wants to understand the attitudes, motivations and aspirations of the women who have entered this male domain. Findings may be utilised to attract other women to the industry and also highlight the industry as a potential career for future generations of women.

Chapter 1: Literature review

The following literature review will look at a number of issues relevant to women's careers and career development. Issues such as; gendered occupational segregation, stereotypes and attitudes, career progression and barriers, women in leadership roles, work life balance issues and parenthood. The chapter will also discuss the psychological measures included in the thesis; job satisfaction, person-environment fit, career motivation and gender role identity, self-efficacy, self esteem as well as career development theories which are all crucial elements to the thesis.

The search strategy to obtain the literature included a number of search terms regarding women/gender and the psychological measures included in the thesis. A combination of search terms were used to narrow the focus including; occupational segregation, stereotype threat, solo status, gender role attitudes, SET, ICT, the computer games industry, career barriers, career aspirations, work life balance, childless, senior roles, leadership, managers, identity, career development and occupational choice. The online search engines; ISI Web of Knowledge, PsychInfo and Scopus were searched. The Internet was also utilised for relevant information especially with references to the computer games industry. Criteria for inclusion were that the articles or reports must be written in the English language, although there was no restriction with regards to the country of the sample and for peer-reviewed articles - date of publication between 1970 -2010. Searches were conducted at the start of the project and periodically every 6 months until December 2010.

The literature review starts by looking at gendered occupational segregation. Occupational segregation is important to women in the workplace since women tend to be concentrated in low status, low paying jobs with less career opportunities, in contrast to male dominated occupations. Stereotypes and attitudes are discussed in section two, due to their importance and impact on women in the workplace. The Science, Engineering and Technology (SET) sector is a male dominated industry. The sector is discussed in section three of the chapter with a focus on women working in SET occupations; specifically ICT industries. Section four discusses career development theories and occupational choice in order to give the reader a

background to the theories and in particular an understanding of social cognitive career theory (SCCT) which provides the framework for the thesis. The next three sections focus on the psychological constructs included in the study. Section five looks at the constructs; career motivation, job satisfaction and person-environment fit and their relevance to women in the workplace. Section six looks at identity theory, social identity theory and the Bem Sex Role Inventory (BSRI) as a measure of gender role identity and section seven looks at issues of the self; self-efficacy and self esteem with reference to women in the workplace. There are a number of barriers which prevent women entering certain occupations and also more senior roles. Career progression, career barriers and women in leadership/management roles are discussed. Section nine looks in more detail at a number of barriers which have been found as being particularly pertinent to women entering and remaining in male dominated occupations. Issues such as work life balance, the long hours culture and children/childlessness. The final section of the chapter looks at cultural issues and generational differences both of which can have an impact on women in the workplace.

1.1 Gendered workplace segregation

The following section of the literature review will look at occupational segregation; as well as men and women working in sex congruent (traditional) and sex incongruent (non-traditional) occupations. Non-traditional careers are defined as occupations with less than 30% of workers of the same sex (Perrone, 2009). Individuals who assume non-traditional roles as a career or within the home challenge gender beliefs and often face discrimination and barriers in those roles (Perrone, 2009).

1.1.1 Occupational segregation

According to the Equal Opportunities Commission (EOC): '*occupational segregation remains one of the strongest influences on young people's choice of career*' (Miller et. al., 2004, p1v). People tend to choose occupations where their own gender is represented. Despite over thirty years of legislation outlawing discrimination on the grounds of gender, occupational segregation persists in the UK and across Europe (Miller et. al., 2004). Occupational segregation is a social phenomenon that persists

despite the growth in the labour market of female participation. The EOC have stated that occupational segregation has a negative effect on individuals, businesses and the economy and that the Government needs to address occupational segregation in order to improve UK productivity, competitiveness and prosperity (Women and Equality Unit, 2005). Agriculture, industry (manufacturing) and financial services remain dominated by men, while the service sector (including health, social work and education) remains largely female dominated (Thewlis, Miller and Neathey, 2004). Information and Communication Technology (ICT) and the Science, Engineering and Technology (SET) sectors remain dominated by men in almost all European states (Thewlis et. al., 2004).

Occupations are social categories, with people within an occupation sharing such things as preferences and experiences (Weeden and Grusky, 2005). Therefore, occupational categories are an important part of a person's sense of self (Taylor, 2010). Taylor argues that: *'a workers occupation is imbued with meanings about the identity of the worker and the appropriateness of the worker's role in that occupation - and that these meanings can have negative or positive implications for perceptions of interactions and support among workers'* (p190). A worker may not necessarily be a minority in an organisation, but they maybe a minority within their occupation within that organisation, and will therefore feel the cultural effects of working in a sex incongruent occupation. Thus, the sex composition of the occupational category regardless of the sex composition of the workers environment can have an effect on the worker (Taylor, 2010).

Gendered occupational segregation is an important issue, especially since segregation into different occupations remains a key factor contributing to the gender gap in earnings (Forth, 2002). According to the Guardian newspaper, British women suffer the largest pay gap in Europe (Revoll, 2007) and internationally, women's wages have been found unequal to men's (Weichselbaumer and Winter-Ebmer, 2005). In a recent study, Mumford and Smith (2007) found the earnings gap between men and women in Britain as due to a combination of things, such as the different characteristics between men and women, workplace segregation and occupational segregation. They also found geographical differences in the pay gap, with the gap wider in the North East than in London. When women are segregated into certain

jobs, those jobs usually pay less, have fewer opportunities for progression, less job autonomy, and less authority within an organisation. From their student research sample, Chalk et. al. (1994) found that both men and women feared feminine jobs, due to the low pay and low status associated with feminine jobs. Higher salaries are given to jobs believed to be masculine rather than feminine, even when duties are similar (Alksnis, Desmarais and Curtis, 2008). Implicit stereotypes have also been found to impact gender differences in estimated salaries; with money and wealth viewed as masculine (William et. al., 2010). It is even suggested that women expect to be paid less than men (Hogue et. al., 2010). Both genders in Hogue et. al.'s research expected to be paid less in female dominated occupations compared to male dominated occupations. Looking at the gender pay gap of staff in a new UK University, Smith (2009) found that the pay gap varies between institutions and staff grades. Smith concludes that there is a link between the size of the pay gap, grade, occupational gender segregation and dissatisfaction at work.

Indeed, evidence has shown that in typically male occupations there are increased opportunities for advancement and career progression than in predominantly female occupations (Tomaskovic-Devey, 1993, in Hultin 2003). Furthermore, due to gender segregation, men and women have less interaction at work and therefore sex-role stereotypes can be perpetuated. Women in male dominated occupations receive less support than men but more support in mixed sex occupations, whereas, men receive high levels of support in female dominated occupations. Therefore, being a minority is an advantage for men however a disadvantage for women (Taylor, 2010).

Women are predominantly in occupations with lower pay, lower prestige and status and lower security. Gender segregation contributes to continuing skills deficits in the UK, which is recognised by the government in relation to some sectors, e.g. ICT (Hewitt, 2001, see Miller et. al., 2004). Segregation can occur both vertically; concentrating individuals in the lower echelons of an organisation and horizontally; concentrating individuals in particular occupations, making some occupations either 'men's' or 'women's' work. Women tend to be restricted in their occupational aspirations and choices, even women of high ability (Betz and Fitzgerald, 1987; Chalk et. al., 1994).

The glass ceiling is a term often used to refer to the vertical segregation of women since it is women who tend to experience this form of segregation the most. The term the glass ceiling has been described by the Glass Ceiling Commission in the USA as:

'... invisible, artificial barriers that prevent qualified individuals from advancing within their organisation and reaching their full potential. The term originally described the point beyond which women managers and executives, particularly white women, were not promoted. Today it is evident that ceilings and walls exist throughout most workplaces for minorities and women. These barriers result from institutional and psychological practices, and limit the advancement and mobility opportunities of men and women of diverse racial and ethnic backgrounds'. (Miller et. al., 2004, p24).

An example of the glass ceiling can be seen within the NHS (Wilson, 2002; Barry and Cook, 2002). The NHS is the largest employer of women in the UK; 81.7% of non-medical staff are women (NHS Hospital and Community Health Services Non Medical Workforce Census Department of Health, 2004), however men hold the majority of senior positions in the organisation. The situation in nursing is similar, whilst women account for around 90% of all qualified nurses; men hold disproportionately higher-grade posts relative to their overall numbers (Wilson, 2002). In the allied health professions women account for 86% of the workforce, yet in the most senior position in the profession, that of consultant therapist, men account for over half of posts at 55% (NHS Hospital and Community Health Service Non-Medical Workforce Census, Department of Health, 2004). Figures vary by profession, for example, in chiropody men comprise 25% of the workforce, however at consultant level men hold 100% of the positions and 36% of management positions. In orthoptics men comprise 16% of the workforce, yet hold 100% of consultant posts (NHS Hospital and Community Health Service Non-Medical Workforce Census, Department of Health, 2004).

The glass ceiling has been found to exist in other countries. In an American study, Jackson (2001) looked at the perceptions of the glass ceiling by women middle managers and found that the glass ceiling was still an issue for women. Jackson claims that: *'beliefs and attitudes held by organisational members, as well as*

contextual aspects of the organisation (i.e. social structures) contribute to the barriers that impede women's career advancement' (p31). Recently, Elacqua et. al. (2009) found from a study of nearly 700 managers from the USA that their beliefs about interpersonal and situational issues were related to glass ceiling perception. Women felt more strongly about the glass ceiling than the male managers, perhaps since it tends to impacts female managers more.

1.1.2 Male dominated occupations

Two early American studies looking into the characteristics of women in non-traditional roles found that, in general, women demonstrated more traits and characteristics associated with men (Lemkau, 1979; Moore and Rickel, 1980). Lemkau (1979) found that women in male dominated occupations had high competency personality traits mostly associated with men. However, the study did not find the women in male dominated occupations differing from other women in regards to feminine attributes such as warmth and expressiveness. With regards to background characteristics, women in male dominated occupations had characteristics related to achievement and comfort with accomplishment in male fields, such as, high maternal employment, and parental encouragement of androgynous exploration (Lemkau, 1979). Moore and Rickel (1980) in a study which compared the characteristics of female nurses and women working in business or industry, found that women in non-traditional occupations (business or industry) were more achieving, had more managerial and male like characteristics and considered the domestic role as less important, and had fewer children than their counterparts in the traditional occupation (nursing).

More recent research by Chang (2003) suggests that structural forces and social control in male dominated occupations induce psychological costs and women withdraw from male dominated occupations. In an American longitudinal study Chang found that women move from male dominated to female dominated occupations because of their negative psychological experiences (sex discrimination, self-efficacy and gender role ideology) in male dominated occupations. In addition, the study found that women in male dominated occupations had higher self-efficacy. Earlier research found that women employed in male dominated occupations actually

have higher lifetime earnings than women in other occupations (England et. al., 1988). Cotter, Hermsen and Vanneman (2003) in an American study looked at the impact of occupational segregation on gender and race and found that occupational segregation particularly impacted the earnings of African American women. The study found that for all women, higher earnings result from working in a male dominated occupation and high earnings also result from working in a local labour market that is not so gender segregated. As well as the pay advantages, male dominated jobs have also been found to have more flexibility and autonomy (Glass, 1990).

Van de Brink and Stobbe (2009) suggest that although gender differences are cultural, 'doing gender' remains situation specific, producing different outcomes in different social and cultural contexts. The hegemonic discourse in male dominated organisations are masculine discourses which value men and masculinity over feminine and femininity and are places where male/men is the norm. Van de Brink and Stobbe found female students in the male domain of earth sciences make themselves invisible by acting and dressing like males, dissociating themselves from femininity. They suggest that the study illustrates that gender practices have already started during higher education. It is therefore also necessary to reflect on gendering practices within higher education to enable the enhancement of gender equality in work organisations. Van de Brink and Stobbe put forward that:

'women who want to climb the hierarchical ladder have to fulfil the norm of ideal student and worker, make extra effort, fight against persistent stereotypes and be self-confident' (Van de Brink and Stobbe, 2009, p463).

A completely different view comes from Badgett and Folbre (2003), who put forward that occupational segregation is perpetuated because women in non-traditional careers are less desirable in their marriage potential than women in traditional careers. They suggest that gender conformity with regards to occupational choice is rewarded for both men and women in the dating market. In a Nigerian sample of female students, Salami (2007) found that collectively and independently, individual difference, family and cultural factors were good predictors of choice of gender dominated occupations. More of the female students who choose engineering as an

occupation were from high socio-economic status homes compared to those who choose nursing. The more family involvement there was also appeared significant in choosing a male dominated occupation, as was higher achievement motivation.

Contextual demands may be more important than biological sex in determining whether individuals exhibit masculine or feminine behaviours (Riesman, 1987). Some recent research findings have shown support for Riesman's assertions (Smith et. al., 1999; Pickard and Strough, 2003). For example, Smith, Noll and Becker-Bryant (1999) asked participants to imagine themselves in various contexts (work, socialising) and to rate the type of person they were in those contexts using the BSRI (Bem Sex Role Inventory). Both men and women reported more masculinity when imagining themselves in a work context compared to a social context. These results could suggest that masculine traits are viewed more appropriate in the workplace. Pickard and Strough (2003) used the same items in the BSRI to develop the state gender role inventory by asking participants to state how true the trait was whilst doing a task. Suggesting gender typed behaviour is constructed during social interactions; people bring their previous experiences, expectations and beliefs regarding gender into the social context and adapt their behaviours accordingly.

1.1.3 Men working in female dominated occupations

Occupational segregation was one of the three main factors contributing to the gender pay gap according to the Equal Pay Task Force (2001). The other two factors were discrimination in pay and the unequal impact of women's family responsibilities. In encouraging men to consider occupations typically viewed as 'women's work', the low status accorded to such work can be a particular barrier. Research has indicated that men are even more reluctant to consider non-traditional areas of work than women (Morris, Nelson, Rickinson, Stoney and Benefield, 1999). England (2010) argues that there has been: *'little cultural or institutional change in the devaluation of traditionally female activities and jobs, and as a result, women have had more incentive than men to move into gender-non-traditional activities and positions'* (p150). Women's lives have changed more than men's. Men and women choose male over female occupations due to the devaluation and underpayment of predominantly female occupations (England, 2010). Encouraging men to enter female areas of work

has been primarily viewed as a way to improve the status and pay of those occupations. Lesser weight has been given to other factors. For example, the necessity to provide role-models for boys and to increase the validity of adopting caring roles which have recently been highlighted as issues in the media (Bawden, 2007).

For men moving into typically female areas of work, there is no equivalent 'glass ceiling' in fact the opposite almost seems to apply. It has been suggested that males gain rapid promotion in female dominated areas (Barry and Cook, 2002). Examples from two areas in which women constitute the majority of the workforce; education and health illustrate this. In secondary schools, women hold the majority of teaching positions, yet men constitute the majority of head teachers (68%). At nursery/primary level; men constitute just over a third of head teachers. This should be set against the context of the ratio of men to women at teacher grade; men comprise only 16% of staff at teacher grade in primary/nursery schools. Men in female dominated occupations report that their minority status is an advantage in terms of hiring and promotion opportunities (Williams, 1992). For example, Hultin (2003) found that men who work in typically female occupations have substantially better prospects of promotion and career progression, than their similarly qualified female counterparts. Maume (2006) reported that being a man employed in a female dominated occupation, such as the allied health professions, may enhance promotion success. Williams (1992) reworked the metaphor of the 'glass ceiling' to that of 'glass escalator' in order to emphasise the smooth and easy transition of men to senior management positions in some occupations; most often female dominated occupations.

Research looking at men in female dominated professions has tended to focus on how they maintain or negotiate their masculinity and the strategies they employ. Men construct and reconstruct what it means to be a man when they work in female dominated occupations (Connell, 2000). For instance, Lupton (2000) interviewed men in non-traditional occupations in order to see how they maintained their sense of 'masculinity'. Lupton argues that men attempt to realign their gender and occupational identities through reconstruction or rationalisation of the nature of their jobs, or by renegotiation of their own conceptions of what it means to be a man. In

more recent research, Simpson (2004) conducted interviews with men from four female dominated professions; librarians, cabin crew, nurses and primary teachers. Simpson concluded that men benefit from the assumption they want to be leaders (the assumed authority effect), by being given differential treatment (the special consideration effect) and being associated with a careerist attitude to work (the career effect). Simpson suggests that men adopt a variety of strategies to re-establish a masculinity which has been undermined by the feminine nature of their role. Strategies used were re-labelling, status enhancement and distancing from the feminine aspects of their role.

Gender discourses have a crucial role to play in promoting and reinforcing the sexual division of labour and the social definition of tasks as men's work and women's work. It has been suggested that it may be easier for women to move into male occupations than vice versa (Bradley, 1993). The token status of men is beneficial to their careers, a very different outcome to the token status of ethnic minorities and women, who are discriminated against, have limited career opportunity and often work in a hostile environment (Simpson, 2004). Male teachers and nurses in Simpson's study recognised that their minority status gave them career advantages. With teaching in particular, more men are viewed as needed in the profession to act as role models for male pupils. There was also an expectation the men in the female dominated careers would want promotion and they were encouraged to improve their chances for promotion through courses. A person's occupation can be a powerful statement about the self. When the men in Simpson's study were asked to describe the popular image of their job they attempted to re-label the job in order to minimise the feminine associations. For example, the librarian's re-named them 'information scientists'. Another strategy was to re-cast the job content to emphasise the more male components i.e. the sport element for teachers. A third strategy was to distance themselves from the feminine components of the job. This was achieved through claiming special attributes such as being able to keep a cool head under pressure, that women are doing the job for a second income, whereas the men are in it for the career and for the nurse's, distance was through the specialities they chose. It would seem that a lot of 'gender work' is undertaken in order to restore a masculine identity that has been undermined by the female nature of a job. The strategies used by men in female dominated professions reinforce and maintain men as the dominant gender.

Men in non-traditional occupations challenge the ideals of appropriate gender behaviour. Men attempt to maintain traditional masculine values through suggesting they do the job better than females; they are more professional or suggesting that it is men's work. These strategies enhance men's career opportunities over women (Cross and Bagilhole, 2002).

Contradictory findings can be observed in a study by Christie. Christie (2006) in a study of male social workers found that due to childcare and caring in general being traditionally viewed as the responsibility of women, men who perform a caring role, especially with children are viewed suspiciously. Furthermore, the men in Christie's study tended to feel the need to justify their job. Christie also found that the women in the study presumed men in social work wanted to care, as they themselves did and not due to any other motives. Other motives why men move into female dominated occupations include career opportunities or enhanced promotion as previously suggested. However, these were the views of the women in the study and not those of the men. Recently, Loughery (2008) used the short version of the BSRI in a study of male nurses in Ireland. Findings revealed that male nurses identified more strongly with female more than male gender norms. This supports the notion that men who have less male stereotypical gender traits feel free to choose non-traditional careers, in this case nursing (Jome and Tokar, 1998). Loughery argues that both masculinity and femininity mean different things to different people and gender roles are in a constant state of flux. A view similar to Collinson and Hearn (1994) who assert that masculinity and femininity are both constructs which are fluid and uncertain, with gender roles being stereotypical to a time and place (Loughery, 2008).

1.1.4 Female dominated occupations

Teaching, especially primary school teaching has become increasingly female dominated (Howson, 1998). Recently in the UK there has been a drive to recruit more men into teaching. However, recent figures suggest the drive fails to redress the gender imbalance in the primary sector (Lipsett, 2008). Recent figures suggest that men comprise 16% of primary school teachers compared to 44% of all secondary school teachers. Two-thirds of secondary head teachers are men whilst one-third of primary school teachers are male (Bawden, 2007). Men who enter primary teaching

tend to be disproportionately represented at the more senior more management levels (Miller et. al., 2004). This is a pattern which can be seen throughout other female dominated professions. For example, in the NHS nursing is viewed as a traditionally female occupation yet research has found that male nurses achieve more senior positions more quickly (MacDougall, 1997; Finlayson and Nazroo, 1998). Wilson et. al. (2006) looking at teachers career progression found that there are a number of constraints that hinder teachers careers. They found that overall head teachers tend to be: *'older, white males, living with their partner and their children'* (p252).

Coleman (2001) surveyed all the female head teachers in England and Wales. Coleman found that for some women taking a leadership role in schools has meant they have had to choose career over family. This is due to the fact that the majority of domestic responsibility and childcare or the care of other dependents falls on women (Davidson and Cooper, 1992; Burke and McKeen, 1994). Similar findings have been found in Spain, where management culture is perceived as strongly masculine, and role-conflict was the biggest barrier for women advancing into headship (Coronel et. al., 2010). Coleman also found senior women suffer guilt associated with childcare, supporting previous research findings (Evetts, 1990; Adler et. al., 1993). Confidence and career planning is also an issue for women. Women tend to have the majority of qualities required for a job before they apply, compared to men who are confident to apply with only a few of the desired qualifications and experience (Shakeshaft, 1993). Coleman suggests that younger women with no childcare responsibilities are more likely to have more confidence and have career plans. Research has also found that stereotyping exists in schools with regards to what role teachers take. Female teachers tend to give more pastoral care and men are more than three times more likely to achieve secondary headship than their female peers (DFEE, 1999).

According to Thornton and Bricheno (2000) gender differences in the workplace and women's work in the home, both limit the career development of a significant number of women. Some of the women in their study wanted to teach so they could fit a career better in with parenthood. Male head teachers in the study were motivated by increased salary, while the women were more attracted to the social aspects of the headship job. The female head teachers in the study were less likely than their male

counterparts to have children, suggesting they have to choose between family and career, a view supported by Coleman's research. The female heads of the study were more likely to head primary schools and they tended to have experienced slower or delayed promotion. Additionally, male teachers in the study were more likely to seek promotion than female teachers. Many women with families felt the need to drop out of the promotion race and there was also the issue of career breaks and regaining career momentum (Thornton and Bricheno, 2000). Student's perception of teachers has also been found to be gendered. In an American study of student's perceptions of faculty members, Miller and Chamberlin (2000) found that students tend to view women as teachers and men as professors. This is despite the educational attainment and actual positions of the faculty members. The researchers suggest that this indicates that female faculty members are devalued.

Reasons for why occupational segregation persists vary. Correll (2004) developed a model which implies that, if men and women make different assessments of their own competence at career-related tasks, they will also form different aspirations for career paths and activities believed to require competence at these tasks. Correll argues that the culture in which individuals are embedded limits what individuals deem possible or appropriate; shaping preferences and aspirations that individuals develop for activities leading to various careers. This process starts early in children's socialisation (Correll, 2004). In contrast, Hakim (1991, 1992, and 1995) puts forward that the majority of women aim for a 'homemaker' career and work is seen as peripheral importance. Therefore, occupational segregation derives from women's work orientation and life priorities. Hakim's view point seems to blame women for occupational segregation in the workforce rather than societal structures and persistent stereotypes that are embedded within society. Justification for gender segregation was found in Greene, Ackers and Black (2002) study. Greene, Ackers and Black (2002) investigated the gendered workplace practices of two manufacturing firms in the UK. They found many male workers justified gendered segregation due to difference between the genders physical abilities.

Summary

It would seem that gender segregation is resilient within the paid labour market despite changes in society such as globalisation, technological changes, and women's increasing presence within paid labour. Gendered occupational segregation has a detrimental effect on many aspects of women's careers most specifically pay, promotion and career opportunities. The lack of women in the computer games industry, highlighted earlier in the introduction, suggests that this gender segregation persists in new industries as well as the older more established ones, despite over 30 years of equal opportunities legislation. It is also apparent that men and women experience the workplace differently. For example, men gain more advantages from their token or minority status compared to women. These advantages include faster promotion, more career opportunities and fewer barriers, suggesting the workplace is still predominately a male domain.

1.2 Stereotypes and attitudes

The following section will look at research on stereotype threat, and solo status within occupations, as well as research on gender role attitudes, influencing women both within the home and the workplace.

1.2.1 Stereotype threat

One reason put forward as to why women may prefer working in gender congruent (traditional) occupations is the concept of stereotype threat. Stereotype threat occurs when an individual's actions confirm a stereotype about a particular group (Steele and Aronson, 1995). Stereotype threat may be elicited by any cue, overt or covert which increases the salience of a negative group stereotype. Both social identity theory (Tajfel and Turner, 1986) and self categorization theory (Turner et. al., 1987) put forward that individuals have two sources of identity; personal identities that are unique to the individual and various social identities due to membership of social groups. According to social identity theory people are motivated to maintain both positive personal and positive social identities. Negative group stereotypes are therefore viewed as a threat to ones social identity. Researchers have induced

stereotype threat through the priming of a negative social identity (McGlone et. al., 2006; Shih et. al., 2002; Steele and Aronson, 1995).

Performance expectation plays an important role in research on stereotype threat. Negative stereotypes can harm performance due to an increase in anxiety. Keller (2002) suggests that stereotype threat can be reduced or eliminated when negative stereotype expectations are irrelevant to the testing situation. However, research has found that by making a group's achievements salient can lessen the negative aspect of the threat. This, in turn, increases performance, perhaps due to an increase in confidence and a reduction in anxiety. McIntyre, Paulson and Lord (2003) conducted two studies with American college students. They found in study one that women performed better on a maths test when they were first told that women were better than men in psychology experiments. In study two, they found that women also performed better on a maths test when they first read about four women who had succeeded in four male dominated occupational fields. Similarly, Shih, Pittinsky and Trahan (2006) assessed the performance of Asian American women on a verbal test. They found that women performed better on the test when their gender identity was made salient than when their Asian identity was made salient. Shih et. al. conclude that identity salience is domain specific, in that; identity may boost performance in one domain but reduce it in another. Steele, James and Barnett (2002) found female undergraduates in male dominated academic areas had higher levels of stereotype threat than women in female dominated areas and men in either area. Suggesting gender was salient for the women in the male dominated areas. Making gender salient has also been found to impact on women's preference of art over maths (Steele and Ambady, 2006) and women also did better on a visual-spatial task when they were told there was no gender difference on the task (Campbell and Collaer, 2009).

In an American study of forty-five male and forty-five female students, McGlone and Aronson (2006) found that women primed to consider their status as private college students performed significantly better on visual-spatial reasoning than women primed to consider their gender. Men's performance was improved when their gender was primed but not when their private college school status was. Suggesting that men and women are mindful of gender stereotypes associated with visual-spatial

reasoning and they were subsequently affected by these stereotypes. The study also claimed that positive achieved identities can mitigate the negative stereotypic expectations associated with the ascribed identity. Therefore, social identity is not only a cause of stereotype threat but can be a cure for its negative effect as well. Visual-spatial abilities are important and central to numerous male dominated fields such as engineering, architecture and chemistry (Campbell and Collaer, 2009). According to Campbell and Collaer: *'performance can be improved, not only through education and training for the skills being tested, but also by simply changing the context in which we present these tasks'* (p443).

Most women will no doubt recognise their membership to the social category 'women'. However, women will vary in the extent to which they consider this social category membership as important to their self identity. Schmader (2002) hypothesized that individuals would be more susceptible to negative stereotype threat depending on how highly they identified with the group which the negative stereotype refers. In a study of male and female college students, Schmader found that individual differences in gender identification moderated the effects of gender identity relevance on women's but not men's maths performance. Women with high levels of gender identification performed worse than men, but women with low levels of gender identification performed equally to men. When faced with threats to their social identity, individuals who are highly identified will engage in behaviours to protect that identity. This suggests that women who feel they must act as representatives of their gender are motivated to perform better on tasks than women who are not as closely identified with their gender. Recently, Oswald (2008) found that strongly gender identified college women liked feminine occupations significantly more than less strongly identified women. Suggesting that stereotype activation is a significant contributing factor as to why women pursue gender traditional occupations rather than non-traditional. The harmful impact of gender stereotypes therefore, should be reduced through an increase in women's participation in non-traditional occupations (Oswald and Lindstedt, 2006).

Another contributing factor of stereotype threat, aside from gender identification, is stereotype endorsement. Schmader, Johns and Barquissau (2004) found women who endorse gender stereotypes about women's maths abilities were more susceptible to

the negative effects of stereotype threat on their maths performance. Therefore, women's beliefs about gender stereotypes moderated the stereotype effect. Making gender identity salient before taking a maths test lowered the performance of women who endorse gender stereotypes and had no effect on those who reject it. These findings suggest that individual differences can have an impact on stereotype effect. Interestingly, Spencer et. al. (1999) found that self-efficacy was not a mediator of stereotype threat. However, it may be the type of efficacy and the threat being assessed that may affect this relationship. There has also been a difference found resulting from the form the stereotype activation takes. For example, Shih et. al. (2002) found that subtle stereotype activation boosted performance whereas blatant ones did not, suggesting that care should be taken in evoking stereotype activation.

1.2.2. Solo status

Being the only woman in a group heightens gender stereotypes and can result in stereotypical task performance. When an individual is the only one of his or her social category in a group then they have solo status (for example being the only member of your race or gender in a group). Solo status has been related to improved performance (Craig and Rand, 1998; Fuegen and Biernat, 2002) and decreased performance (Sekaquaptewa and Thompson, 2002 and 2003). Craig and Rand (1998) found that solo African American women were more likely to be leaders in all female groups and that they received more favourable evaluations from their white female peers than did non-solo status African American women. Also in support of the potential benefits to solo status, Fuegen and Biernat (2002) found that women in solo status performed better on masculine tasks. On the other hand, Sekaquaptewa and Thompson (2003) looked at solo status and stereotype threat of women and men and the dual impact of these conditions on oral exams. They found that women performed more poorly in solo status than non-solo status environments and under stereotype threat than no threat. They also found that experiencing both solo status situations and stereotype threat was more detrimental to women and that men's performance was the same across all the conditions. They suggest that women entering solo status develop lower expectancies than solo status men about their performance, and that this led to poor actual performance. Earlier research by Sekaquaptewa and Thompson (2002) found that solo status at the testing and learning stage lowered performance

and that women performed worse than men when orally tested in front of a group. Inzlicht and Ben-Zeev (2000) found women in solo status underperformed when taking a maths test but not a verbal test. However, in their study Inzlicht and Ben-Zeev used a written test rather than oral testing methods as used by Sekaquaptewa and Thompson. Suggesting there could be a difference in the effect of solo status when testing is private compared to public.

These inconsistencies perhaps indicate there are moderating factors to the effects of solo status. For example, variables including gender, group stereotypes, and group status, have been shown to moderate the effect of solo status on individual performance (Crocker and McGraw, 1984; Sekaquaptewa and Thompson, 2002; Yoder, 1994). More recently, White (2008) found cognitive appraisals had a moderating effect on solo status. Results from two separate experiments suggest that for individuals who feel challenged by their work but not threatened by their work, cognitive appraisals can help to moderate the effects of solo status (White, 2008).

1.2.3. Gender role attitude

Gender role attitude refers to the beliefs and expectations about what is appropriate for males and females in terms of behaviour (Gushue and Whitson, 2006). Previous studies have found that women with egalitarian gender role attitudes have higher levels of career orientations, aspirations and expectations, compared with women with traditional gender role attitudes (McWhirter, Hackett and Bandalos 1998; O'Brien and Fassinger, 1993). In a recent study, Berrington, Hu, Smith and Sturgis (2008) investigated the reciprocal relationships between the changes in women's labour force participation following entry into parenthood and changes in gender role attitude. The authors found that attitudes are not fixed but rather attitudes are revised depending on life events. The study also found that women with more traditional attitudes were more likely to reduce their hours at work or leave altogether on becoming a mother. They were also more likely to become a mother. However, the women who remained childless in their 30s were surprisingly also more likely to hold traditional gender role attitudes. This, the authors argue, is the reason they remain childless, since they believe that women should leave the labour market on becoming a mother, but due to their career commitment they choose to remain childless.

In earlier research, Cassidy and Warren (1996) found full time employed women to be the most supportive of non-traditional family gender roles, followed by part-time employed women and the least by women who were full time homemakers. These findings suggest that women vary in their gender role attitude depending on work experiences. With regards to the men in the study, those with full time employed wives showed the most supportive attitudes, especially towards working mothers. Using data from the World Value Surveys (1990, 1995, 1999), Fortin (2005) investigated the impact of gender role attitudes and work values on women's labour market outcomes across twenty-five OECD (Organisation for Economic Co-operation and Development) countries. The study found that anti-egalitarian views had the strongest negative association with female employment rates and the gender pay gap. However, these negative views diminished across the cohorts and time. Traditional views of the man as breadwinner and the woman as home maker remained stable across time and appeared to be formed in youth and strongly influenced by religious ideology (Fortin, 2005).

Differences in gender role attitude and labour force participation have been found to vary significantly between different countries. For example, Haller and Hoellinger (1994) compared the gender role attitudes and female labour force participation of eight countries. Results did not find what the authors hypothesized, in that, the higher the employment rate of women in a country did not reflect the amount of egalitarian attitudes present in that country. For instance, Hungary had the highest level of female employment and the most traditional attitudes; whereas the Netherlands had relatively low employment rates and strong egalitarian attitudes. The authors found that gender role attitudes are shaped by numerous factors such as the socio economic and the religious heritage of the countries. They also found gender differences in that women, compared to men, are more in favour of female employment. Differences were also found between women, the more highly educated women considered employment to be important as a means to gain equality between the genders.

Gender role attitudes have also been found to influence family formation and vice versa (Kaufman, 2000; Moors, 2003). Moors (2003) found that non-traditional gender roles increased the likelihood of single living or cohabitation and more traditional family forms, such as being married or being a mother, related to

traditional family values. Kaufman (2000) in an American longitudinal study found that gender role attitudes matter with regards to family formation for both men and women. Egalitarian women were found to be less likely to have children than traditional women. Egalitarian men were more likely to cohabit than traditional men; they were also less likely to divorce once they were married than traditional men and unlike egalitarian women, egalitarian men were more likely to intend to have children and to do so, more than traditional men. Another recent study looked at the construction of gender role attitudes in American adolescents to young adulthood, and found that current family context is the most important in attitude construction and as the adolescent ages, life experiences become better predictors (Davis, 2007). The research by Davis, found that egalitarian people become more traditional after marriage and the birth of children. Factors that have been associated with egalitarian gender role attitudes in women include maternal education and employment (Bolzendahl and Myers, 2004; Fan and Marini, 2000). Egalitarian gender beliefs have been correlated with many psychological measures such as confidence, higher self esteem, higher self-efficacy and instrumentality (Athrens and O'Brien, 1996; Ossana et. al., 1992; Ridegeway and Jacobson, 1979).

Summary

Stereotypes can impact women's careers in a number of significant ways as exemplified in the literature on stereotype threat and solo status. It has even been suggested that stereotype threat is a significant contributor as to why women continue to pursue gender congruent occupations (Oswald, 2008). The literature has also shown how being the only woman (solo status) in an environment can reinforce negative stereotypes and activate stereotype threat. These issues are particularly important when considering the careers and career development of women in male dominated occupations. Gender role attitudes also play an important part when discussing women's career development. Since a person's gender role attitude can influence a number of aspects in their lives such as family formation and work force participation.

1.3 Science, Engineering and Technology (SET)

The next section of the literature review focuses on the lack of women within the SET and ICT sectors. Data from the Labour Force Survey, 2007 indicates that there were 556,159 women and 2,468,507 men working in SET occupations in the UK (Women were 18.7% of all SET workers and men 81.3% a proportion roughly 1:4 female to male). In terms of the proportional growth, overall the number of SET women workers increased by 12.3% between 2002 and 2007 (a 62,000 growth from 504,364 in 2002), which is proportionately almost double that of their male counterparts (a 6.5% or 150,000 growth from 2,317,837 in 2002)²⁷.

1.3.1 The SET sector

The Science, Engineering and Technology sector (SET) has paid particular attention to issues of gender in recent years. The Roberts Review of Science, Engineering and Technology (Roberts, 2002 see Miller et. al., 2004) noted that:

'... the proportion of girls studying mathematics and the physical sciences post-16 is still considerably lower than that of boys, which contributes to the under-representation of women in science and engineering more generally. The review is clear that the under-participation of women in SET is damaging the UK's supply of scientists and engineers' (Roberts, 2002, see Miller et. al., 2004, p47).

According to the report women with SET degrees have lower economic activity rates than both males with SET degrees and women with non-SET degrees. Structural issues to do with the way in which work is organised in SET industries and inflexible work practices, contribute to making working in this sector difficult for women. Similar issues emerged from the later Greenfield Review (Greenfield, 2003, see Miller et. al., 2004), investigating the barriers to retention and career progression for graduate and postgraduate women in science.

²⁷ Accessed January 2009 <http://www.ukrc4setwomen.org.uk/html/research-and-statistics/statistics/>

Research looking into female engineer's experiences in the workplace has found that women themselves often help sustain gender divisions and stereotypes. For example, Jorgenson (2002) interviewed 15 female engineers and found that the women were reluctant to acknowledge gender relations as consequential for their careers. Also, they did not perceive female engineers as a marginalised group. Previous research suggests that female engineers become 'one of the boys' (Eisenhart and Finkel, 1998; McIlwee and Robinson, 1992). Eisenhart and Finkel (1998) argue that female engineers help reproduce their subordinate status by not acknowledging gender differentiation. Other research has found that female engineers use strategies such as distancing themselves from engineering values and culture (Kvande, 1999). More recently, Powell, Bagihole and Dainty (2009) found female engineers used a number of coping strategies in order to gain male acceptance. These strategies included; acting like one of the boys, accepting gender discrimination and adopting an anti-woman approach. They suggest that: *'in 'doing' engineering, women often 'undo' their gender' (p411)*. Not only do women engineers who hide their femininity fail to challenge the gendered culture of engineering, they also maintain an environment which is hostile to women (Powell, Bagihole and Dainty, 2009).

A double-bind effect tends to exist in engineering where feminine women engineers are viewed incompetent and competent women engineers are viewed unfeminine; instilling the male norm. A dualism has also been found within engineering identities with men viewed as 'technical' and women 'social' (Faulkner, 2007). Faulkner (2007) concluded that engineering as a profession needs to find a way of promoting a more heterogeneous image of engineering and engineering identities. In early work, Faulkner (2005) found that even when women are visible as women they are invisible as engineers (see Griffiths et. al., 2007). Similarly, Camussi and Leccardi (2005) looked at the recurring reproduction of expectations of intra-gender homogeneity based on a traditional female role. Camussi and Leccardi through qualitative analysis with female lecturers and students concluded that the refusal to recognise intra-gender differences in the workplace: *'may contribute to conserving the power imbalances existing between men and women and sustaining women's systematic relegation to 'second place' in the workplace' (p113)*.

Investigating forms of inclusion and exclusion in the workplace, Gray et. al. (2007) through in-depth interviews with electrical engineers in an English IT firm found gendered and ethnic patterns of occupational segregation existing in engineering. They found inequalities in access to and awareness of resources contained within social networks in the workplace. The study highlights the need to understand forms of inclusion and exclusion in the workplace, which they found are often embedded in informal chats, friendly gestures and sporting partners. Gray et. al. (2007) warn against treating the engineering occupation as a homogenous entity. They argue that women occupy the 'support' engineering jobs at the bottom of the engineering hierarchy occupied by very few men.

The media portrayal of female scientists has also been found to be gendered. Research commissioned by the UK Resource Centre for Women in Science, Engineering and Technology investigated the representation of women in SET by the UK media. The study found that the language used to describe female scientists can be highly gendered, with more reference to their appearance than their male counterparts. They also found that male scientists are more likely to be cited and interviewed than female scientists (Kitzinger et. al., 2007)

1.3.2 Women in the Information and Communication Technology (ICT) sector

The ICT industry represents a classic case of gendered occupational segregation, in that women are over-represented in administration and service occupations but underrepresented in the technical, scientific and engineering occupations. The ICT industry is diverse with a number of occupations, the majority of which centre around computers. The Widening Women's Work in ICT (WWW-ICT, 2004, Valenduc et. al., 2004) report of seven European countries defines the ICT profession as:

'Our definition of the ICT professions goes beyond the classical computer-related professions and includes new professions related to the Internet and multimedia. Despite this enlargement, women are still poorly represented in

ICT professions, and the gender gap is even worsening in several European countries' (WWW-ICT, 2004, p9).

According to the Labour Force Survey (2003), computer and related activities employ 514,000 people, of which, 22% are women (Miller et. al., 2004). Before the economic downturn, Microsoft claimed to have more than 13,000 job openings which they were unable to fill due to a lack of people coming into the industry and a lack of qualified people in the world to meet the demands for ICT workers (Brown, 2008)²⁸. Thewlis et. al. (2004) in an analysis of the sector across Europe found women were in the minority across all European states not just the UK. There has been a general decline in female participation within the IT industry in the UK, with only 22% of IT workers being female in 2004 as opposed to 50% in 1960. Women that are in this sector tend to be more strongly represented in the lower echelons. For example, the Labour Force Survey (2003) found that 30% of women were IT operations technicians, only 15% were ICT managers and 11% IT strategy and planning professionals. However, women have been found as being better educated than men but are located in the lower status and lower pay areas of the industry (Faulkner, 2001).

The ICT sector has been active in recent years to encourage women into the sector. A number of government strategies have been put into place to encourage more women into the sector and address the skills need (Hewitt, 2001 see Miller et. al., 2004). The *Computer Club for Girls* scheme is one such UK government initiative. The initiative aims to combat the image problem of computers and emphasise the fun aspect of computers, in order to keep girls interested and potentially consider a career in the industry. Non-government initiatives also run, for example, Microsoft ran the Digigirls 2007 workshop for 200 girls aged 12-15 to learn more about ICT and games (Brown, 2008)²⁹. Similarly, The University of Teesside ran its first girls and gadgets conference in 2008 aimed at girls 13-16. Initiatives in the area are worldwide. In America, the University of Denver runs the P4Games girls only summer camp to

²⁸ Brown, E. Keynote speaker day 2 of the Women in Games 2008 conference, 10-12th September 2008.

²⁹ Brown, E. Keynote speaker day 2 of the Women in Games 2008 conference, 10-12th September 2008.

encourage girls to learn more about game development.³⁰ However, despite the adoption of equal opportunities policies and various campaigns worldwide to attract women into ICT, women are leaving the industry in large numbers (Burns et. al., 2007).

Gender differences in pay could be a significant reason why women are dissatisfied and leaving the industry. According to Tattersall, Keogh and Richardson (2007) there is a gender pay gap within the UK ICT profession, despite over 30 years of equal pay legislation. Tattersall et. al. suggest that there are a number of reasons why this gendered pay gap is reinforced within the industry. For example, their study found that individualised pay packets were common within the industry, which requires individuals to have strong negotiation skills and confidence. Previous research by Tattersall et. al. (2004) found women are less comfortable with this more masculine and aggressive form of pay. There is also a culture of what has been termed, 'salary secrets' in the UK IT industry. The Equal Opportunities Commission (2001) introduced the Equal Pay Review toolkit with the aim of making pay systems transparent. Tattersall et. al. (2007) found that women are still discriminated against in terms of pay and promotion opportunities when they take time out of work for maternity leave; a finding also supported by the WWW-ICT (2004) report. In 2003, the Office for National Statistics found the gender pay gap narrower in the ICT sector than for all other professional occupations, at 7.5% for ICT professionals and 10% for ICT managers. However, due to salary secrets and individually negotiated pay and reward systems (Tattersall, Keogh and Richardson, 2007) the perceptions of pay discrimination may have a strong impact on women's perceptions of the industry. According to the Women and Work Commission (2006) taking time out of the labour market to have children is still one of the main reasons why women earn less than men. The ICT industry does not generally support part-time working or other flexible working arrangements for either gender, which has more of an impact on women with children. Tattersall et. al. (2007) argue for a shift within the industry to combat these issues.

³⁰ <http://p4games.org/>

According to the WWW-ICT (2004) report women who have families are rare in the industry and therefore there is no pressure to change the organisation of work or workloads. Women in the study tended to be like their male colleagues in terms of young and without children. The report found that many companies had a culture of masculinity which can involve groups of young men decorating workplaces with pictures of nude women, sharing sexist jokes and socialising in all male groups. Not all women, however, are put off by this work environment. The WWW-ICT (2004) report suggests that companies that claim to be 'gender-neutral' are actually gender-blind and do not notice or act upon gender inequalities (Valenduc et. al., 2004). It seems women have to fit in with existing systems rather than the industry looking to understand different workplace practices and cultures. Although only one aspect of the culture, Bagihole et. al. (2008) argue that gender is fundamental to the cultures of organisations. The symbolic association between masculine and feminine have consequences for those working in SET organisations. Bagihole et. al. put forward the need for SET organisations to challenge the perceived duality between masculinity and technology, as well as to embed work life balance and flexible working practices into the organisational culture and highlight their availability to men not just women. The following quote highlights ways in which a masculine culture can operate and impact women:

'There is a 'masculine culture' of computing work consisting of language, images, working methods and working relationships, which women are both excluded from and find off-putting' (WWW-ICT, 2004, p40).

However, despite the disadvantages, some women feel they benefit from the visibility of working in a male environment. A mix of skills such as problem solving, communication and relation skills were all found to be relevant in the ICT sector. Women in the study enjoyed working in teams and using a mix of technical, human and organisational skills as the positive aspects of computing. However, the WWW-ICT (2004) report also found that women are often directed towards project management even if they prefer technical work due to assumed interpersonal and organisational skills.

With regards to promotion, the WWW-ICT report suggests that ICT organisations have a flat structure with little hierarchy (Valenduc et. al., 2004). Flat organisations lead to an informal working environment but career ladders can be short or nonexistent. A lack of formal structures and progression processes can make it particularly difficult for women to gain advancement. The report found the industry was opposite to more formal bureaucratic models of other industries. This can be a disadvantage to women since it has been argued that women tend to achieve better in organisations where career paths are clear (Wickham et. al., 2008). Wickham et. al. (2008) challenge the argument that bureaucracy is inherently patriarchal. Through a study of software firms in Ireland the authors found that bureaucratic companies benefited women more than the non-bureaucratic, individualised companies who tended to be more hostile to women. Within the bureaucratic organisation, they found women can insist that rules and regulations imposed by equal opportunity policies and legislation are enforced. Within the software companies the authors found women had to choose between career and motherhood due to the companies' inflexible practices. Wickham et. al. suggest that the software companies initially appear welcoming to women due to flexible working but it turns into a trap. Similarly, in an earlier study, McIlwee and Robinson (1992) compared the mobility of female engineers in a bureaucratic company with an innovative computer firm and concluded that women's mobility is greatest where the masculine culture of engineering is minimised by bureaucracy.

In the USA, 35% of the IT workforce in 2002 was female, a decline from 41% in 1996, with women holding less than 10% of the top positions (Information Technology Association of America, 2003, see Adya and Kasier, 2005). The under representation of women in the IT workforce is a worldwide problem, however it appears more predominantly a problem in western countries such as the UK, USA, Canada, Australia and New Zealand. Trauth (2002) and von Hellens and Nielsen (2001) both found that women from non-western countries such as India and China have more positive attitudes towards computers and technology than their western counterparts. This is particularly so in India where families expect both girls and boys to take on careers in either medicine or engineering (Adya and Kaiser, 2005). According to the WWW-ICT (2004) report there are national differences in the

number of women in the ICT sector across the EU. In 2001 women accounted for 17% of IT professionals in the EU15 and 12% of engineers (WWW-ICT, 2004).

The IT industry and in particular computers have had problems with image. An image often perceived as 'geeky' and the work is viewed as unsociable, solo technical work (Miller et. al., 2004). Focus group research by Edwards and Stephenson (2002) found that in the UK young people viewed the ICT sector as boring, geeky and dominated by male workers (in Miller et. al., 2004). Symonds (2000) found similar results in a study of New Zealand female high school students, who described IT work as boring, anti-social with little communication, despite acknowledging the career benefits of high salaries and good job opportunities (in Harries and Wilkinson, 2004). The hacker image of ICT work is said to deter women from entering the profession (Faulkner, 2001; Turkle, 1988; Wajcman, 2004). Other deterrents include the long hour's culture which makes it difficult for women and men with caring responsibilities (Gill, 2002; Perrons, 2003) and that the industry is modelled on men's rather than women's stereotypical lifestyles (Kelan, 2008). Research also suggests that a culture of 'presenteeism' and total availability are features of the sector. Both features discriminate against women, in particular women with families (Laufer, 2000).

Computer science in western countries has often been characterised as 'masculine' (Wajcman, 2000; Clegg and Trayhurn, 2000; Natale, 2002; Wilson, 2003). This image discourages women from studying the subject (Clegg and Trayhurn, 2000; Wilson, 2003). According to Wajcman:

'Technologies have a masculine image, not only because they are dominated by men but because they incorporate symbols, metaphors and values that have masculine connotations' (Wajcman, 2007, p289).

For James and Cardador (2007), women's cognitions and beliefs about technology and science are more negative than men's, resulting in a disinterest in the employment sector. One reason for this disinterest in computers and games is the long hours that have become standard (Fullerton et. al., 2008). Another reason relates to the identity of women within the industry. Women are asked to exchange

aspects of their gender identity for a masculine version and forsake their femininity without this de-gendering process occurring in men (Wajcman, 2007). From a different view point, Plant (1998) suggests technologies enable users to choose disguises and form alternative identities and can blur the boundaries between male and female. Plant views digital technologies as feminine media and potentially liberating for women. Especially since now, women are more than ever accessible to technology through mobile phones and the internet.

Despite this increased access, Kelan (2007) suggests that the use and design of technology is gendered. People position themselves in relation to technology based on certain gendered assumptions about technology in societies. According to Kelan, women tend to distance themselves from technology whereas men tend to appropriate technology. This distancing from the masculine technology may be viewed as the doing of gender. Many approaches to gender and technology view them as co-produced or mutually shaping (Wajcman, 1991; Berg and Lie, 1994; Berg and Lie, 1995). Faulkner (2001) suggests that there are two distinguishing ways in which gender affects technology. Firstly, gender in technology suggests that technologies contain gender scripts (Rommes et. al., 1999), which prescribe by whom and how certain technologies ought to be used (Faulkner, 2001). It is these salient gender assumptions that are referred to as gender in technology. Secondly, is the gender of technology, which refers to the symbolic association between gender and technology and tends to mean that women shy away from computing technology which is perceived as masculine. Kelan (2008) through qualitative research of two ICT companies in Switzerland, looked at the gendering of skills in ICT work and what skills are deemed important for ICT work. Kelan's (2008) research found that the ideal ICT worker needs emotional skills as well as technical skills, since there is a lot of team work involved in ICT work. The ideal worker is often viewed as being male (Acker, 1990; Wajcman, 1998). However, Kelan found the ideal worker to be gender neutral and that feminine skills in men were viewed as ideal worker skills, whereas in women they were viewed as natural. Adkins (2002) argues that femininity is becoming a valued skill within the workplace; however it is not women per se who profit from the increasing valuation of femininity. Adkins suggests that men are equally good, if not better in making use of femininity. Kelan's research lends support to this view. Hybrid roles, combining technical and traditionally female skills

have been viewed as a way forward for women to adjust to working in male work cultures without them compromising their gendered identity (Guerrier et. al., 2009).

It has been suggested that in order to cope with the challenge to their own gender identity and those of the men with whom they work, women in ICT must develop strategies (Newell, 2002). There appears to be three main strategies employed by women in ICT. One strategy is not to enter the industry (Adam et. al., 2006). A second is to leave the industry in the face of a continuously challenging work environment (Burns et. al., 2007). A third strategy is to make their gender identity invisible (Griffiths, Moore and Richardson, 2007). Kram and Hampton (1998) put forward the notion of the visibility-vulnerability spiral existing for women in ICT. When women are underrepresented in an industry or workplace, subtle yet powerful dynamics can work to undermine the underrepresented group. These dynamics produce: *'heightened visibility, intense scrutiny of performance, and the pressure to assimilate into the majority culture'* (Kram and Hampton, 1998, p213).

The industry has been associated with a new style of working; a style which may not be advantageous to women. Working long hours for a short time on a project, then being out of work has been termed the 'bulimic career' (Pratt, 2000). It is especially difficult for women with children to have a bulimic career that is work that can be intensely busy for long periods such as when a game is near completion (Gill, 2002)³¹. This bulimic career style of working appears to be the case for new media workers and perhaps the style of working for future generations (Gill, 2002). It has been suggested that insecure, informal and discontinuous employment will become the norm (Beck, 2000). Gill (2002) put forward that the image of new media work as cool, non-hierarchical and equalitarian is entrenched in gender inequalities relating to education, access to work and pay. She also found a number of new forms of gender inequality emerging connected to the features of work that are valued such as informality, autonomy and flexibility. In a study of 125 freelance media workers in six European countries, Gill (2002) found that as freelance workers they are not connected to any particular workplace or organisation; as virtual workers they could not be located in any specific place. Participants in the study characterised their work

³¹ Known in the computer games industry as crunch time.

as multimedia content creation, digital art, computer game design, animation, video art, web broadcasting, internet and website design. They were young, aged 25-35 and the majority had a University degree; with half having a postgraduate education. They were mostly art graduates rather than computer science graduates and most defined themselves as artist; especially the women, rather than programmers. Gill found that women and men have different experiences of work in new media, challenging the egalitarian view of the industry. For example, women earned less money and they were more likely to work from home, which was seen as a disadvantage in the industry due to the lack of networking available, which was deemed necessary for attracting new contracts or projects. Finding new projects is through whom you know not what you know. This was perceived by some women as a form of gender exclusion, similar to the 'old boys' network'. Therefore, this style of working is not meritocratic or egalitarian when based on connections rather than open competition. The study found that women emerged as clear losers in terms of the number of contracts and the money earned within the industry. Gill concludes that: *'patterns of discrimination are naturalized and inequality and injustice wear an egalitarian mask'* (p86). This is encapsulated by one participant's view of the industry: *'give me a formal hierarchy any day over the fake democracy and pseudo-equality of this work'* (p83).

A lack of efficacy and interests, by women has been put forward as a reason why so few women seek a career within ICT. In an American study of the IT industry, Michie and Nelson (2006) found that men had greater self-efficacy for IT occupations and more passion for computing than females. The study also found that men had a less positive attitude towards women's capabilities for IT, resulting in gender biases and computers viewed as a male domain. Similarly, Singh and Allen (2007) found that women rate their abilities lower and report lower confidence than men do in computer related tasks. This is despite equal or superior task performance. Men also displayed a more relaxed approach and playful attitude towards computers. According to Margolis and Fisher:

'People who pursue technical occupations often indicate that they have a passion or "magnetic attraction" that drives them to explore and discover how the technology works.' *The computer industry has developed a*

reputation of having a 'leaky pipeline', since women exit at a faster pace than men (Margolis and Fisher, 2002 see Michie and Nelson, 2006 p12).

The following table from 2006 UCAS data illustrates this lack of interest by females; with only 22% of successful applicants for mathematical and computer sciences and 25% of successful applicants for technology subjects being female.

Table 1. 3 The number of successful applicants to all UK Universities at HND and undergraduate degree level in 2006 by subject and gender. ³²

Subject	Male	Female	Percentage of successful females
	Number of Successful Applicants	Number of Successful Applicants	
Mathematical and Computer Science	18898	5266	22%
Technologies	1994	669	25%

Due to this underrepresentation of women in computer science and ICT occupations, researchers have looked at strategies to attract and include more women. For example, Faulkner and Lie (2007) suggest a variety of inclusion strategies are needed to reach a wider audience and reduce the gendered digital divide. They argue that 'one size does not fit all'. Due to the diversity and fluidity in both gender and ICT's, Faulkner and Lie suggest that multiple strategies are required for different technologies, social groups and settings. They found that the image of ICT is changing and becoming viewed as less 'for men only' mainly due to the increase usage of computers and technology in everyday lives. This increasing use of ICT's by women may increase the numbers working in ICT in the future (Faulkner and Lie, 2007). Lagesen (2007) looked at strategies to include women into computer science and found that the most successful strategy was a direct effort to increase the relative number of women, combined with efforts to make the women feel welcome and appreciated. Von Hellens et. al. (2004) found through qualitative research with 32 female IT professionals in Australia that women in IT talk of themselves as different from other women they know. The women interviewed also felt that they were challenging the dualism of gender. The research found two important strategies for changing the image of the industry; mentoring and awareness. Mentoring can provide female role models, eradicate stereotypes, and highlight the positive aspects of being

³² Source www.ucas.co.uk accessed 2nd January 2008

a woman in IT. Whereas, awareness via professionals talking with females in their educational years, can both help change the perception of the industry and challenge some of the images associated with working in it.

Research also suggests that women differ in their reasons for choosing a career in ICT. For example, Teague (2002), through interviews with fifteen female professionals working in computing careers found that the women choose their computing careers for a variety of reasons. Reasons included the influence of others, ability and liking of maths and/or problem solving, and the employment advantages of good money and the demand for personnel. These reasons are similar reasons as to why men pursue and remain dominant in the sector (Teague, 2002). Kidd and Green (2006) studied the careers of UK research scientists and found that the factors explaining career commitment and intention to remain in the profession were similar for men and women. Suggesting that gender in itself does not explain women leaving the profession. Interestingly, Kid and Green also found that parenthood and relationship status had no direct relationship with work attitudes, career commitment or intention to leave science.

Research has found women differ in a number of ways within the ICT industry. From a sample of New Zealand and Australian female IT professionals, Trauth (2002) found that women experience a range of individual, institutional and cultural influences on their career progression. The female professionals were also found to possess a variety of personal characteristics that have helped them to cope and succeed. Participants viewed themselves as forthright, strong, driven, ambitious, mathematical, less social than other women, logical and competitive. These traits were viewed as important for success in IT. Trauth suggests that, despite the common experiences and barriers experienced, women in IT do not experience all the same influences and barriers, nor do they respond to situations in the same way. Trauth argues for an individual differences theory of gender and technology which is supported by Singh and Allen (2007) who argue that: *'the educational and occupational choices women make are not unrelated to other parts of their lives'* (p518). According to Trauth et. al. (2004), individual differences play an important role in forming career choices. This theory challenges the essentialist and social construction perspectives of gender and IT. Individual differences include personality

traits, enjoyment of computers, experiences of women and the socio-cultural environment.

Stereotypes also seem to play an important part within the industry. Harries and Wilkinson (2004) investigated first year Canadian University students perceptions of twelve information occupations. Computer engineer and lawyer received the highest prestige rating and librarians the lowest. The study found that the presence of more women in an occupation had a negative impact on the prestige of the profession, the salary it attracts, the education required to enter it and the degree of computing knowledge required. This supports the literature on occupational segregation as highlighted earlier in this review. Ahuja (2002) found social factors such as gender stereotyping, role models, parental support, and structural factors such as access to technology and teacher support, influence women's entry and performance in IT careers. More recently, Adya and Kaiser (2005) found that parents and particularly fathers play a significant role in influencing girls' choice of IT careers. They also argue that early access to computers can help reduce intimidation of technology.

Through analysis of the Workplace Employment Relations Survey 2004 (WERS, 2004), Rose (2007) compared the ICT and teaching sectors. Rose found that despite the ICT industry offering secure, interesting, lucrative work with good career opportunities, teaching professionals are close to the top of the UK job satisfaction league, whilst ICT professionals are close to the bottom. However, the study also found that the ICT professionals reported a much lower level of work-related pressure than teachers despite the differences in job satisfaction. According to Bartol and Aspray (2006), many women with computer science degrees choose not to enter computer related occupational fields. The following tables show the proportion of women and men who took computer science and technologies at both undergraduate and postgraduate level of study and the occupations they entered. For those who took computer science as their first degree, the majority of men became ICT professionals whereas the majority of women entered 'other occupations'.

Table 1. 4 The percentage of men and women (2005/2006) in different occupations who took computer science as their first degree.³³

Occupation	Female %	Male %
Science professionals	0.3	0.0
ICT professionals	19.7	35.1
Research professionals	0.6	0.6
Architects, town planners, surveyors	0.3	0.2
Other professionals	9.7	3.5
Draughtspersons and building inspectors	0.3	0.2
IT service delivery occupations	9.1	11.5
Other occupations	33.0	23.1

With regards to those who studied computer science at postgraduate level, a higher proportion of both genders entered ICT professionals, with men entering more.

Table 1. 5 The percentage of men and women (2005/2006) in different occupations who took computer science at postgraduate level of study³⁴.

Occupation	Female %	Male %
Science professionals	0.0	0.8
ICT professionals	25.7	41.1
Research professionals	4.1	4.4
Architects, town planners, surveyors	0.0	0.4
Other professionals	23.0	11.3
Draughtspersons and building inspectors	0.0	0.4
IT service delivery occupations	5.4	5.2
Other occupations	10.8	8.1

³³ Source <http://www.ukrc4setwomen.org/> accessed 2nd January 2008

³⁴ Source <http://www.ukrc4setwomen.org/> accessed 2nd January 2008

With regards to the number of men and women who qualified in STEM (Science, Technology, Engineering and Mathematics) subjects in 2008, it can be seen in the table below, that women qualified more than men in subjects allied to medicine. Biological sciences, was the only subject of equal parity between the sexes.

Table 1. 6 The number and percentage of men and women who qualified in STEM subjects by gender in the UK, 2008³⁵

	Female	Male	Total	Female %	Male %
Subjects allied to Medicine	93,620	48,414	142,034	65.9	34.1
Biological Sciences	157,240	158,871	316,111	49.7	50.3
Physical/Environmental Sciences	130,076	296,188	426,264	30.5	69.5
Mathematical Sciences and Computing	117,412	368,107	485,519	24.2	75.8
Engineering	49,699	489,468	539,167	9.2	90.8
Technology	24,168	55,557	79,725	30.3	69.7
Architecture, Building and Planning	47,767	139,664	187,431	25.5	74.5
All qualified in the subjects above	619,982	1,556,269	2,176,251	28.5	71.5
Non-STEM qualifications	3,096,557	2,037,343	5,133,900	60.3	39.7
Total	3,716,539	3,593,612	7,310,151	50.8	49.2

Table 1.7 shows the number of women and men in different SET occupations in the year 2008. It can be clearly seen that women only come close to parity with teaching professionals and non-SET occupations, with slightly more women than men as research professionals. Men dominate nearly all the SET specialities and the sector as a whole.

Table 1. 7 SET occupations by gender and employment status in the UK, 2008³⁶

	Female	Male	Total	Female %	Male %
SET managers	153,951	958,532	1,112,483	13.8	86.2
Science professionals	52,615	81,050	133,665	39.4	60.6
Engineering professionals	32,106	436,474	468,580	6.9	93.1
ICT professionals	66,076	391,560	457,636	14.4	85.6
Teaching professionals	111,351	118,922	230,273	48.4	51.6
Research professionals	34,250	32,577	66,827	51.3	48.7
Building professionals	32,929	143,758	176,687	18.6	81.4
Science and engineering technicians	53,555	184,578	238,133	22.5	77.5
Draughtspersons and building inspectors	14,918	62,847	77,765	19.2	80.8
IT service delivery occupations	43,855	136,223	180,078	24.4	75.6
All SET occupations above	595,606	2,546,521	3,142,127	19.0	81.0
Non-SET occupations	12,067,458	12,851,257	24,918,715	48.4	51.6

³⁵ Source <http://www.ukrc4setwomen.org/> accessed 2nd January 2008

³⁶ Source <http://www.ukrc4setwomen.org/> accessed 2nd January 2008

The table below shows that men are represented more at all career stages within the computer sciences and as women's careers progress they are less represented in the computer sciences; whereas for men their representation increases.

Table 1. 8 The gender composition of computer science from primary and secondary school qualifications to various career stages at UK higher education institutions, 2006/07³⁷.

Career Stage	Female Proportion (%)	Male Proportion (%)
GCSE Awards (England)	47.8	52.2
A-level Awards (England)	36.3	63.7
UK Full-time Undergraduates	15.3	84.7
UK Full-time Postgraduates	18.8	81.2
UK University Researchers	20.0	80.0
UK University Lecturers	24.8	75.2
UK University Senior lecturers and researchers	19.2	80.8
UK University Professor	14.1	85.9

There is evidence that suggests women take non-traditional paths to enter ICT careers. For example in the USA, Bush et. al. (2002) found women in the IT industry had no formal training in a computer-related field, but started their careers in non-technical jobs (see Bartol and Aspray, 2006). Similarly, in the UK Faulkner (2002) found that 62% of graduates in IT jobs graduated in subjects other than IT (see Bartol and Aspray, 2006). The WWW-ICT (2004) report suggests that women enter ICT occupations from different routes due to the increase of the more artistically orientated ICT professions (Valenduc et. al., 2004). This seems particularly so for the games industry where a higher percentage of the female professionals are concentrated in the artistic side of game development (Haines, 2004). This was also found to be the case for men and women working in new media (Gill, 2002). Highlighting the different roles within ICT and the different routes one can take to get into the industry may benefit the industries in attracting and retaining a more diverse workforce.

Summary

The SET and ICT sectors present classic examples of occupational gendered segregation. Both sectors have been active in increasing women's participation through a number of government strategies; especially by increasing the appeal of the industry to women. The WWW-ICT (2004) report, found a number of factors contributing to the lack of women's participation in ICT. Factors such as the long

³⁷ Source <http://www.ukrc4setwomen.org/> accessed 2nd January 2008

hour's culture associated with the sector, the lack of females, especially females with families within the sector and the perception that the industry is masculine, geeky and unsocial. Many of these issues have also been found more specifically within the new industry of games development as highlighted previously. Perhaps suggesting not much has changed for women in male dominated sectors.

1.4 Career development theories and occupational choice

There are a number of dominant career development theories within the literature; the following section will briefly discuss some of these theories.

1.4.1 Holland's theory

Holland (1973) developed the career typology theory. The theory suggests that individuals are attracted to a particular occupation which meets their personal needs and provides them satisfaction (Arnold et. al., 1991). Holland's theory is a theory of person-environment fit. Person-environment fit theory within which Holland's theory sits will be discussed in more detail later in this review.

Holland's theory rests on four assumptions:

1. In our culture, persons can be categorized as one of the following: Realistic, Investigative, Artistic, Social, Enterprising or Conventional (RIASEC).
2. There are six model environments: Realistic, Investigative, Artistic, Social, Enterprising and Conventional.

The RIASEC model:

Realistic = constructing, repairing, using tools

Investigative = researching, solving abstract problems

Artistic = composing, creating, writing

Social = teaching, helping, serving

Enterprising = selling, managing, persuading

Conventional = setting up procedures, organising, operating computers

3. People search for environments that will let them exercise their skills and abilities, express their attitudes and values, and take on agreeable problems and roles.

4. Behaviour is determined by an interaction between personality and environment.

A hexagonal model was developed to illustrate the relationship between personality and occupational environment. Holland's theory of career choice is a widely acknowledged theory which suggests that individuals work personalities and work environments can be classified into the six RIASEC types, described above. Research on Holland's theory has included a number of studies looking at the relationship of the Big Five personality traits with the Holland RIASEC dimensions. For example, Hartman and Betz (2007) found that conscientiousness and extraversion are predictors of career self-efficacy, whereas neuroticism is linked to inefficacious career behaviour. The theory has also been widely used in the measurement of domain specific self-efficacy (Rottinghaus, Larson and Borgen 2003). Much research supports Holland's typology (i.e. Hartman and Betz, 2007; Gottfredson and Duffy, 2008). The strongest criticism of the theory is based on gender bias, since females tend to score in three personality types (artistic, social and conventional). Holland attributes this to our society, which he suggests, channels females into female dominated occupations.

1.4.2 Schein's career anchors

Schein (1975, 1978, 1987 and 1990) put forward the construct of 'career anchors', which have three components:

1. Self-perceived talent and abilities
2. Self-perceived motives and needs
3. Self-perceived concept attitudes and values

The first two components are based on actual experiences in the work setting and the third is derived from the person's experience of a variety of norms and values encountered in different social and work situations. According to Schein (1990) an individual's career choice will be affected as they mature and their anchor stabilises. Schein's theory distinguishes between eight career anchor types, with an individual having one true career anchor which emerges after they have accumulated enough life and work experience and is unlikely to change once developed.

The eight anchors are:

1. Security and stability (motivated by the desire for security of employment and benefits)
2. Autonomy and independence (motivated by the desire for freedom to pursue career interests, free from organisational constraints)
3. Technical/functional competence (motivated by the desire for enhanced technical competence and credibility)
4. Managerial competence (motivated by the desire for managerial responsibilities)
5. Entrepreneurial creativity (motivated by the desire to create new products and services)
6. Service and dedication to a cause (motivated by the desire to engage in activities that improve the world in some way)
7. Pure challenge (motivated by the desire to overcome major obstacles and solve almost unsolvable problems)
8. Life style (motivated by the desire to integrate work and family needs).

Career anchors can be measured via quantitative and qualitative methods; the quantitative measurement is the Career Orientation Inventory (COI) which consists of 40 statements (five for each of the eight anchors posited by Schein (Schein, 1990)). Schein's theory suggests that a stable career identity is formed which is distinct from the process of initial vocational choice (Fledman and Bolino, 1996). Once an individual achieves congruence between their career anchor and their occupation they will have more positive career outcomes than those who do not attain this congruence.

Research on career anchors have tended to use small or homogeneous samples in terms of occupation (i.e. Igarria and Greenhaus, 1991; Feldman and Bolino, 2000; Marshall and Bonner, 2003). As a result, in a much larger, heterogeneous sample of 1,847 working adults in Israel, Danziger and Valency (2006) examined Schein's eight career anchors and found that lifestyle was the dominant (nearly one third of the sample) anchor for both men and women. However, this was the dominant anchor for almost twice the percentage of women compared to men. Danziger and Valency's results possibly suggest that the workforce in Israel is motivated in balancing work

and family life especially for women. They also support Schein's notion that a career anchor matched with an individual's occupation will lead to increased job satisfaction as a positive career outcome.

Although many researchers support Schein's concept, there is continual debate as to the nature and number of career anchors. For example, Marshal and Bonner (2003) suggest that there are nine factors of the COI not eight as originally proposed by Schein. More recently Danziger, Rachman-Moore and Valency (2008) found the nine construct model fitted their data better than the eight construct model supporting Marshal and Bonner's early assertion. In a Nigerian study, Ituma and Simpson (2007) explored the career anchors of IT workers and found a new anchor emerged, that of 'being marketable' which is the desire to develop a portfolio of highly sought out skills. Whereas, Suutari and Taka (2004) in a study of global managers found that managers based their decisions on two or three career anchors rather than just one and suggested a new anchor of 'internationalism' among global managers. Despite these proposed anchor variations, Schein's theory is still highly regarded and supported by the research.

1.4.3 Social Cognitive Career Theory (SCCT)

Social Cognition Career Theory (SCCT) is developed out of Albert Bandura's, 1986 social cognitive theory. SCCT attempts to address issues of culture, gender, genetic endowment, social context and unexpected life events that may interact with, and supersede the effects of career-related choices (Lent, Brown and Hackett, 1994). The theory highlights how: *'beliefs about the self, including those related to gender roles, intersect with the perceived social structures to influence career preferences'* (Evans and Diekman, 2009, p237).

The theory focuses on the connection of self-efficacy, outcome expectations and personal goals, interests and environmental factors that influence an individual's career choice. SCCT proposes that career choice is influenced by the beliefs the individual develops and refines through four major sources; a) personal performance accomplishments, b) vicarious learning, c) social persuasion and d) physiological states and reactions. How these aspects work together in the career development

process is through a process in which an individual develops an expertise/ability for a particular activity and meets with success. This process reinforces one's self-efficacy or belief in future continued success in the use of this ability/expertise. As a result, one is likely to develop goals that involve continuing involvement in that activity. Through an evolutionary process beginning in early childhood and continuing throughout adulthood, individuals narrow the scope to successful activities to focus on and form a career goal/choice. What is critical to the success of the process is the extent to which the activity is viewed and the extent to which individuals feel they can become successful. The contextual factors come into play by influencing the individual's perception of the probability of success. If the person perceives few barriers the likelihood of success reinforces the career choice, but if the barriers are viewed as significant there is a weaker interest. By adolescence, it is argued that most people have a sense of their competence at a vast array of performance areas, along with convictions about the likely outcomes of a career. Through a process of intervening learning experiences that shape further a persons abilities and impacts self-efficacy and outcome beliefs, vocational interests, choices and performances are shaped and reshaped.

SCCT is concerned with dynamic and situation-specific aspects of people (e.g. self-views, future expectations) and their environment (Lent and Brown, 2006). SCCT has five core constructs:

- 1) Self-efficacy is: *'people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performance'* (Bandura, 1986 in Lent and Brown, 2006 p15).
- 2) Outcome expectations which include; anticipated social (benefits to family), material (financial gain) and self-evaluative (self-approval) (Bandura, 1986).
- 3) Goals which are activity and performance goals (Lent and Brown, 2006).
- 4) Interests which are the likes, dislikes and indifferences people have with different activities (Lent and Brown, 2006).
- 5) Contextual supports and barriers which can be actual or perceived (Lent and Brown, 2006).

Lent et. al. (2001) argue that barriers and supports indirectly affect career choice; with domain specific barriers perceived more strongly than global barriers. They also

found that higher coping efficacy was associated with the perception of lesser barriers, greater supports and more self-efficacy. Lent et. al. (2003) found that supports and barriers are related to choice actions and choice goals indirectly via self-efficacy rather than directly.

In their extension of Bandura's (1986) social cognitive theory to the domain of career development, Lent et. al. (1994) articulated how personal variables (ethnicity and gender), external environmental factors (oppression and socialisation) and cognitions (self-efficacy and outcome expectations) interact to either promote or impede career development processes; including career interests, goals and performance. In further support of their career development theory, Lent et. al. (2007) looked at the relation of a number of social cognitive variables; self-efficacy, outcome expectations, environmental supports and perceived goal progress to academic satisfaction. Using a structural equation model the authors found academic satisfaction to be jointly and directly predicted by perceived goal progress, self-efficacy, outcome expectations and environmental supports; supporting the SCCT model. Lent and Brown (2006) suggest that SCCT can be used to relate to other criteria but it may be inappropriate to frame the study as a test of SCCT hypotheses.

SCCT is a highly utilised theory and framework for research on career choice and development. For example, Bakken, Bryars-Winston and Wang (2006) looked at the career development of clinical researchers in America using SCCT. They found SCCT to be a useful framework in understanding the complex process of developing and sustaining a clinical research career. The authors suggest that organisations should provide environmental support as well as pay attention to factors outlined in SCCT in order to promote the career development of scientists. More recently, Rogers, Creed and Searle (2009) used three key variables of SCCT self-efficacy, outcome expectations and goals, to look at medical student's choice of speciality and practice location. Other researchers have suggested that SCCT research should consider other variables such as gender role attitude, ethnic identity and social class (Flores et. al., 2006). From a sample of Mexican American boy's, Flores et. al. (2006) found that non-traditional career self-efficacy was related to non-traditional career interests. The study found that boys with mothers or fathers who had non-traditional careers did not impact on the career self-efficacy of the boys. Therefore,

non-traditional career self-efficacy was not directly predictive of non-traditional career choice. However, non-traditional career self-efficacy indirectly predicted the selection of non-traditional careers through its effects on non-traditional career interests. Neither perceived barriers related to sex discrimination nor mothers or father's non-traditional careers was predictive of non-traditional career self-efficacy. In an earlier study, Flores and O'Brien (2002) looked at the career development of Mexican American adolescent women and found consistent with SCCT that non-traditional career self-efficacy predicted non-traditional career interests and that non-traditional self-efficacy had a positive effect on career choice prestige. Parental support and perceived future occupational barriers directly predicted career choice prestige, however they found no relationship between the contextual variables of the study (acculturation level, feminist attitudes, mothers educational level and mothers occupational traditionally) and non-traditional career self-efficacy.

1.4.4 Women's careers and SCCT

SCCT has been a dominant theory in understanding women's career choice. This next section would like to discuss some of this research. The extent women perceive barriers as impacting their career development has been positively related to their outcome expectations (Lindley, 2005). According to Lindley, women may idealise male dominated careers that they view implausible due to gender related barriers. Lindley suggests future research could look at the impact barriers have on career choice and the distinction between internal and external barriers and barriers of specific fields. Self-efficacy for coping with barriers is also important to consider, since how an individual copes may determine if an individual will attempt to, and succeed in overcoming perceived barriers to career development. Recently, Cunningham, Doherty and Gregg (2007) used SCCT theory to look at the under representation of women in coaching. The American study collected data from 66 assistant coaches from numerous sports fields. The authors found that men had greater coaching self-efficacy, anticipated more positive outcomes associated with being a head coach, possessed greater interest and more intention to becoming head coach than women did. SCCT has also been shown as a useful theory in assessing women's perceived career barriers (Swanson and Woitke, 1997). Perceived barriers are important to SCCT and occupational choice. Even if an individual has high self-

efficacy for a career, positive outcome expectations and interest, they may still avoid that career if one perceives considerable barriers to attaining it (Brown and Lent, 1996).

SCCT has also been used to understand ethnic identity and career choice. According to Cook, Heppner and O'Brien (2002) more attention within career development and career counselling research should take into account the life priorities and role commitments of women generally, and ethnic minority women specifically. Fouad and Byars-Winston (2005) through a meta-analysis of the relationship between culture and vocational choice found that race and ethnicity differences did not affect career aspirations, but that there are differences amongst racial and ethnic groups in regard to perceptions of opportunities available and barriers. The authors lend support to Cook et. al.'s (2002) ecological model as a comprehensive model that suggests factors within the contexts in which people work and live are strong influences on career choice. Lent et. al. (2005) found in a study of engineering students, that students in the predominantly black University had stronger self-efficacy, outcome expectations, technical interests, social support and educational goals towards engineering than that of the students at the predominantly white University. However, they found that women did not differ significantly from men suggesting that both male and female engineering students have similar levels of academic self-efficacy, technical interests and outcome expectations. Interestingly, women did however perceive more social support and fewer social barriers than the men in the study. Gushue and Whitson (2006) explored how gender role attitude and ethnic identity might be related to career decision self-efficacy and the gender traditionalism of career choice goals. Gender role attitudes and ethnic identity within a SCCT model, like personality, are viewed as person inputs that may influence self-efficacy. With a sample of black and Latina female students, the authors found that career decision making self-efficacy fully mediated the influence of egalitarian gender role attitudes and ethnic identity on gender traditionalism in career choice goals. Therefore, ethnic identity and gender role attitudes play an important role in the career development of ethnic minority girls in an American sample. One explanation given for this by Gushue and Whitson is that higher ethnic identity and higher egalitarian gender role attitudes may give girls confidence that they can manage the effects of racism and sexism in career exploration.

SCCT research has often focused on maths and science disciplines due to the underrepresentation of women and ethnic minorities in these fields and the suggestion that self-efficacy intervention may eliminate this underrepresentation (Betz and Schifano, 2000). Fouad, Smith and Zao (2002) looked at extending SCCT across academic domains by successfully applying the model to students across a number of academic disciplines art, social science, maths/science and English; highlighting the theories applicability to a range of disciplines. It can be seen by the literature highlighted, that SCCT is a dynamic theory unlike the theories proposed by Holland and Schein. The theory is widely regarded and utilised, especially within the realm of women's career choice and development.

1.4.5 Theories of occupational choice

In 1981, Gottfredson developed one of the key models of occupational choice; the Gottfredson model of circumscription and compromise. The model proposed that the extent to which the job was sex role stereotyped and congruent with the individual's gender was the most important of three factors that direct young people's choice of career. The other two main influencing factors the model suggests are an individual's interests and ability and the status of the occupation. Gottfredson's theory proposes that if an individual fails to obtain a job that matches on all three dimensions then the individual will compromise for less ideal jobs. Sex role stereotyping is considered such a central aspect of the individual's identity that according to the theory this is the last factor to be abandoned when a job is sort. However, Hesketh, Durant and Pryor (1990) found that sex-congruence was often the first factor to be discarded and they found status as more important. They suggest that since far fewer female dominated than male dominated occupations have high status; women who want high status work have no choice but to seek employment in non-traditional occupations. Hesketh et. al. suggest this may be one reason why women are moving into male dominated occupations.

In relation to gender roles, Riggio and Desrochers (2006) in a study of American college students, found students with employed mothers reported less traditional family attitudes such as fewer children planned, egalitarian division of household duties and greater parenting self-efficacy. Women with employed mothers expected

to spend less time with their families than women with non-employed mothers, whilst men with employed mothers expected to spend more time with their families than men with non-employed mothers. The study also found gender differences in that women reported greater parenting and work self-efficacy than men. Gottfredson (1981) suggests that occupational choices are likely to be consistent with ideas about appropriate gender roles. In order to understand gendered segregation in employment, Cejka and Eagly (1999) examined the extent to which people believe that success in occupations dominated by one sex requires personal characteristics typical of that sex. So that female dominated occupations require stereotypically feminine attributes and male dominated masculine attributes. The authors suggest that female personality or attributes were deemed essential for success in female dominated occupations and male personality attributes for male dominated occupations. They also found higher prestige and higher earnings were attributed to occupations with more masculine personality attributes. According to Cejka and Eagly (1999), occupations had higher prestige and higher earnings when participants believed they required masculine personality.

In support of the importance of sex role stereotyping, Neumayer et. al. (2002) looked at the extent to which the visibility of female surgeons influenced the career choices of female medical students. The study found that female students' choice of a career in surgery is strongly associated with the higher proportions of female surgeons within the faculty. The research suggests that students who view the role as possible for their gender are more likely to study surgery. The study also emphasises the potential importance role models can have in effecting women's career choices as suggested by a number of theorists (Ragins, 1989; McCarthy, 2004). Recent research has found team performance expectations to be more favourable when the team leader's gender is congruent with the industries gender typing (Cabrera et. al., 2009). With regards to men, men who pursue gender traditional occupations are more likely to endorse anti-feminine attitudes, have difficulties concerning restrictive emotionality and restrictive affectionate behaviour between men and hold homophobic attitudes than men who pursue non-traditional gender occupations (Jome and Tokar, 1998). Mahalik et. al. (2006) supporting Jome and Tokar's earlier findings looked at American college men's conformity to masculinity and found that conformity to masculinity varied as a function of their vocational interests. Similarly,

Lease (2003) found that men in traditional occupations tended to have less liberal attitudes, higher socio economic status, higher educational aspirations and greater perceptions of their academic ability than those in non-traditional occupations.

In 1987, Eccles developed a model of occupational decision making for women. The model recognises that there are a number of different factors that contribute to occupational decisions. The model suggests that the selections of occupations are determined by an individual's expectations for success and the perceived value of an occupation to that individual. Therefore, if a woman expects she will be able to succeed in a position and perceives the position of value, she is likely to pursue the position. According to the model there are a number of factors which influence expectation and value of tasks. These factors include; gender role expectation, stereotypes, socialization and perceptions of goals. For example, high school girls have been found as being more willing than boys to alter their career plans for the sake of a family (Jozefowicz, Barber and Eccles, 1993). Building on these findings, in 1994 Eccles applied the model to understanding women's educational and occupational career choices. Eccles found that women's occupational choices are not made in isolation of their other life roles. An example of this would be women choosing careers as teachers in order to fit in other life roles; predominantly motherhood (Thornton and Bricheno, 2000). Eccles argues that women tend to enter female dominated occupations due to their socialisation and because choosing such an occupation enables women to integrate work into their lives. Eccles also suggests that women who know women in male dominated occupations, know women face discrimination and harassment as well as subtle forms of disapproval from friends, relatives and colleagues. The anticipation of negative experiences deters women from male dominated jobs, suggesting more equitable treatment and family friendly policies in male dominated domains would facilitate wider choice of occupation for women.

Another career choice theory is self-to-profession matching theory. This theory suggests that adolescents compare what they are good at, what they want from a job and what activities they like, with their (in)correct expectations of a particular profession (Rommes et. al., 2007). Eccles suggests that inaccurate and insufficient information about professions is the main reason why young women do not consider

or rule out occupations that might fit their self schema. Another career choice theory is the self-to-prototype matching theory. According to this theory, professional choice is related to the type of person people think is typical for working in that profession. When choosing a profession people construct an image, a prototype of a person who works in that profession (Hannover and Kessels, 2004). People chose professions with the closest prototype fit with their self-image. Rommes et. al., found in a study of Dutch adolescents that: *'performing the proper gender identity by matching the self with a prototype of a profession that fits one's sex offers a good explanation for why boys and girls consider a career in some jobs, and certainly not in others'* (p314). Both these self-to theories suggest that self-image and identity construction are important in choosing a profession. However, the structural and cultural conditions which shape individual opportunities should not be ignored.

Astin (1984) argues that work expectations including self-efficacy, interests and career options are set in socialisation processes and by early perceptions of the structure of job opportunities for men and women. The socialisation processes and the structure of opportunity are interactive and they each influence the other, according to Astin. Astin's model includes four inter-related factors; motivation, work expectations, socialisation and structure of opportunity. Astin proposes that children are reinforced for engaging in gender appropriate behaviours and they become aware of availability of opportunity. Astin's model could be applied to women in the gaming industry since children develop an interest and confidence in games which can be transferred to the IT industry generally as an occupation. According to Astin children are rewarded for some activities and not for others, some of which are along gender lines which develops expectations of the type of work available and acceptable for them. Hoi and Hiebert (2005) used Astin's model on a sample of Canadian students and found that Astin's four constructs operate differently for males and females and for people whose first language is not English. Their findings suggest that both men and women are socialised differently as well as people for different cultures.

It would seem women face a number of difficulties in their career choice and careers. Tracey and Nicholl (2007) suggest that career development is structured around men and should instead, include the diversity of women's career experiences gained in

paid work and that of domestic labour in the home. It has also been highlighted from a review of the literature surrounding women in trade and construction, that there is a need within career development research and theories to consider the careers of non-college women as well as the careers of professionals (Ericksen and Schultheiss, 2009). Due to the changing nature of employment, it is suggested that women are rejecting the outdated career model based on stable employment and are instead enacting a newer 'we are self-employed' model (Shapiro, Ingols and Blake-Beard, 2008). Women's work choices of working part-time or taking time out of the workforce are viewed as deviant and wrong due to the predominant 'work is primary' career model; which demands full-time and non-stop employment. Due to this predominant career model, Shapiro et. al., argue that women face a double bind; follow the outdated 'work is primary' model and be consistent with societal expectations but be vulnerable to chaotic labour markets or follow the new 'we are self-employed' model and be labelled as unambitious and uncommitted. Women who want to focus predominantly on their careers also face questions of their role as a 'good woman' (Fels, 2004). Yet women who focus on their families and forego a career are also disparaged. Shapiro et. al., argue that there are four main forces driving women's strategic choices. Firstly organisational upheaval; secondly, the changing nature of work now people do not stay in one organisation but have a 'boundary less career' (Grzeda, 1999); thirdly, technological advances which have enabled work to occur anywhere and at anytime and fourthly, more knowledge based work that also enables work which can be done at home, shifting family and work values.

Summary

There are a number of dominant theories concerned with career development and occupational choice. There are the trait like theories as proposed by Holland and Schein, which suggest that people are more fixed and stable. In contrast, there are the more dynamic theories such as Social Cognitive Career Theory, which look at the interplay between the self, environmental and other external factors. A number of the theories have been developed to gain an understanding of women's career choice such as those put forward by Eccles, Astin and Gottfredson. These theories help explain why women tend to choose traditional occupations. However, why some

women choose to work in male dominated occupations is not as widely researched. A deeper understanding of the motivations and aspirations of women working in male dominated occupations will lead to a greater understanding of women's careers more generally.

1.5 Individual differences and the environment

People experience the same work conditions in different ways and can react quite differently to situations based on personal characteristics and attributes. This next section would like to take into account some of these personal characteristics by looking at theories of career motivation, person-environment fit and job satisfaction. These areas will be looked at in the context of career choice and development, specifically with regards to women.

1.5.1 Career Motivation

Career motivation is a psychological process enacted from both within the individual as well as external to the individual. London and Stumpf (1982) argue that there are three basic dimensions of career motivation; career resilience, career insight and career identity. Career resilience provides the personal drive for continuing in the face of obstacles; career insight reflects a strong understanding of oneself and the work environment and career identity channels the individual's energy, behaviour and performance toward a specific set of career objectives. From these three dimensions there are four patterns of career development; healthy, redirection, intervening self-doubt and breaking away from an ineffective pattern (Quigley and Tymon, 2006).

In a review of work motivation theory and research, Latham and Pinder (2005) examined research in the areas of needs, traits, values and cognition, as individual perspectives on work motivation. They suggest that in the last 30 years the three most important theories to emerge in the area are goal-setting, social cognitive and organisational justice theories (Latham and Pinder, 2005). With regards to needs, much of the motivational research stems from Maslow's (1943) hierarchy of needs theory (see Wicker et. al., 1993 for an over view of Maslow's theory). According to

Haslam et. al. (2000): *'to understand motivation one must understand aspirations of the self that exist in a hierarchy'* (Latham and Pinder, 2005, p487). Haslam et. al. suggest that an individual's self-identity needs to be maintained and as such individuals are motivated to attain goals that comply with their self-identity. Personality traits have also been viewed as primary predictors of motivation (Schmitt et. al., 2003). For example, Tett and Burnett (2003) developed a model which proposed that employees seek out and are satisfied with tasks, people and job characteristics which allow them to express their personality traits. In earlier work, Judge et. al. (1997) developed a theory of traits called core-evaluations. Core-evaluations are motivational traits which explain job performance and satisfaction and are manifested in four traits; self esteem, locus of control, neuroticism and generalised self-efficacy. With regards to values, according to Locke and Henne (1986) values are inherent in most work motivation theories. Social cognition theories of motivation centre on the importance of self-efficacy beliefs and goal setting (Schunk, 1990; Schunk and Zimmerman, 1994). Therefore, individual needs, traits and values all play an important role in career motivation.

1.5.1.1 Intrinsic and extrinsic motivation

There are two main types of motivation; intrinsic and extrinsic. Intrinsic motivation refers to when an individual is motivated due to personal reasons such as an interest in and enjoyment of an activity. Whereas, extrinsic motivation refers to when individuals are motivated by external or instrumental reasons such as rewards. Thomas, Jansen and Tymon (1997) suggest that the positive experiences of intrinsic motivation enables individuals to become involved, committed and energised by their work. According to the authors intrinsic motivation consists of four components; feelings of meaningfulness, choice, competence and progress. Combined these four components make up a set of intrinsic rewards deemed necessary to produce and sustain empowerment (Thomas, Jansen and Tymon, 1997). Intrinsic motivation has been viewed important in career self-management (Quigley and Tymon, 2006). The cognitive evaluation theory put forward by Deci and Ryan (1985) suggests that self-determination and competence are the hallmark of intrinsic motivation. Deci and Ryan developed a trait like measure of personal causation; the general causality orientations scale. Although the scale is not a direct measure of intrinsic and extrinsic

motivation, the authors did suggest that autonomy orientated individuals will be more intrinsically motivated and control orientated individuals more extrinsically motivated.

Early theorists of intrinsic and extrinsic motivation tended to view them as opposing constructs. In that an individual's intrinsic motivation will decrease to the extent that their extrinsic motivation increases (Lepper and Greene, 1978). However, there are some theorists who suggest that intrinsic and extrinsic motivation coexist (Deci and Ryan, 1985; Amabile et. al., 1994). For instance, Amabile, et. al. (1994) developed the work preference inventory in order to assess individual differences in both intrinsic and extrinsic motivations of adults and students. They suggested that the main elements of intrinsic motivation are; self-determination, competence, task involvement, curiosity, enjoyment, and interest. The main elements of extrinsic motivation are; concerns with competition, evaluation, recognition, money or other tangible incentives and constraints by others. The authors propose that both motivations can be strong, salient and stable to the individual and not just due to the social context.

In 1985, Farmer developed a model of career motivation which consisted of background, personal and environmental factors that affect career motivation. Background factors include gender and abilities; personal factors were primarily related to sex role socialisation which has been found to affect both women's achievement and career motivation, and environmental factors included parental expectations and socialisation experiences within and outside the family. Farmer (1987) reviewed studies investigating gender differences in career and achievement motivation and found that the effect of parent and teacher support on motivation was stronger for women than for men. She found that background, personal and environmental factors were all significant in influencing both career and achievement motivation, with background factors being the least influential. Farmer and Chung (1995) extended Farmers 1985 model from adolescents to college students and found that career motivation was related to a person's achievement and persistence in a career. They found that career commitment was not predicted by background variables in students as it was for adolescents. Farmer (1997) developed a model that focuses on the motivational dimensions of career salience, career aspirations and

mastery. Using Bem's sex role inventory (BSRI), Farmer found that the instrumental self-concept as derived from the masculine scale of the BSRI enhanced career salience and mastery motivation. Farmer's model focuses on: *'sex role socialisation processes as they affect beliefs, attitudes and self-concepts which, in turn, affect motivation, choices and behaviours, especially for women'* (Farmer, 1997, p360).

1.5.2. Person-environment fit

Person-environment fit refers to how much an individual matches or fits the environment in which they work. Theoretically, environments will recruit and retain people whose characteristics are congruent to the working environment and people will prefer and persist in environments that are congruent with their vocational personalities. Holland's career typology theory mentioned earlier emphasised the importance and interdependence of the work environment on an individual's career choice. According to Gottfredson and Duffy (2008) Holland's theory of vocational personalities and work environments was developed to describe, understand and predict the vocational choices people make. The theory is also intended to account for the differential attraction of environments for certain types of people.

Person-environment fit is of interest to organisational and vocational scholars due to its benefits to employee attitudes and behaviours. For instance person-environment fit has been positively related to job satisfaction, organisational commitment and negatively related to turnover (O'Reilly et. al., 1991). O'Reilly, Chatman and Caldwell (1991) developed an instrument for assessing person-organisation fit; the organisational culture profile (OCP). The authors demonstrated a distinction between person-organisation fit and person-job fit and they suggest that both types of fit have a unique impact on employee issues such as job satisfaction and intention to leave. Their study found that person-organisation fit predicts job satisfaction, organisational commitment and turnover, suggesting the importance of understanding the fit between an individual's preferences and organisational cultures.

In a later study, Lauver and Kristof-Brown (2001) further distinguished between employees' perceptions of person-job fit (P-J) and person-organisation fit (P-O). Lauver and Kristof-Brown put forward that person-environment fit is defined as the

match between the abilities of a person and the demands of a job. Or the needs of a person and what the job provides. Whereas, person-organisation fit refers to how an individual matches an organisations values, beliefs and goals. Lauver and Kristof-Brown (2001) developed a new five item measure in order to measure perceived P-J fit. In order to measure perceived P-O fit the authors developed a three item scale from earlier work by Cable and Judge (1996). The study found that both P-J and P-O fit had an impact on job satisfaction and that P-O fit was a better predictor of intention to leave. They suggest that P-O and P-J fit should be treated as two distinct constructs. It has also been suggested that employees distinguish between three kinds of fit person-environment fit, needs-supplies fit and job demands-employee abilities fit (Cable and DeRue, 2002). It is argued that there are many different types of person-environment fit, including person-vocation, person-career, person-job, person-organisation, person-group and person-supervisor fit, all of which have a unique impact on employee outcomes and suggest that people react to different aspects of their work (Cha, Kim and Kim, 2009).

One of the major limitations of person-environment fit theories is that personalities and job characteristics, environment etc. are often viewed as stable rather than dynamic (Latham and Pinder, 2005). Neufeld et. al. (2006) proposed a model of person-environment interaction in which the engagement construct replaces the static notion of fit. The engagement construct consists of negotiation, participation and evaluation. Negotiation refers to an ongoing process which both the individual and the environment make adjustments to accommodate each other. Participation is the degree of positive interactions between a person and an environment in the psychological, physical and emotional domains. Evaluation is a continuous part of the process. Person-environment fit has also been shown to relate to individual differences such as self-efficacy, self esteem and identity. Self-efficacy theory suggests that people will be attracted to jobs and organisations based on the extent to which they believe they can succeed. Therefore, individuals with higher self-efficacy will be more likely to value their subjective perceptions of fit more heavily when judging attraction to an organisation, than individuals with lower self-efficacy (Bandura, 1986). However, self-efficacy has been found to be more important than person-environment congruence in the career decision making of college women (Srsic and Walsh, 2001). More recently, Ehrhart and Ziegert (2005) looked at why

individuals are attracted to organisations from an applicant perspective. They suggest that three theories; environment processing (this can be the actual or perceived environment), interactionist processing (how the persons characteristics interact with the environmental characteristics) and self processing (such as self-efficacy, self esteem and social identity), form the basis for a framework for attraction research. Research has also shown that people consider a variety of environmental variables as signals such as characteristics and policies (Arthur and Airman-Smith, 2001). According to consistency theory (Korman, 1966) people with high self esteem prefer work that corresponds to their self-image and are more attracted to jobs that fit their needs than people with low self esteem. Saks and Ashforth (1997) also found a relationship between self esteem and perceptions of person-job fit.

1.5.3 Job satisfaction

In 1976, Locke defined job satisfaction as: *'a pleasurable or positive emotional state resulting from an appraisal of one's job or job experiences'* (in Ilies and Judge 2004, p1300). More simply, job satisfaction is the degree to which individuals like their job (Spector, 1985). There are a variety of facets within the construct of job satisfaction. These involve employees feelings toward different dimensions of their work role and work environment i.e. satisfaction with pay, promotion, co-workers or organisational structure. Satisfaction with ones job or organisation is related to factors such as the job role, the working environment and identifying with organisational goals and objectives. Recently, Weiss (2002) defined job satisfaction as: *'positive (or negative) evaluation judgement one makes about one's job or job situation'* (in Brief and Weiss, 2002, p283).

Job satisfaction is viewed as having both cognitive and affective dimensions (Organ and Near, 1985). These dimensions should however, not be viewed as in conflict since moods and emotions experienced in a job may be a cause of job attitudes and an indicator of them (Brief and Weiss, 2002). Understanding the job satisfaction of employees is an important organisational goal. Many organisational outcomes such as productivity and efficiency are related to employee's levels of job satisfaction (Ellinger et. al., 2002). When employees are dissatisfied at work, they are less committed and will often look for opportunities to leave the organisation (Perryman

2004; Gorden and Denisi, 1995). Shields and Ward (2001) found that job satisfaction was the single most important determinant of intention to quit among NHS nurses. Those who reported being very dissatisfied with their job were 65% more likely to report an intention to quit than those who reported being satisfied (Shields and Ward, 2001).

A variety of personal characteristics have been found to have significant effects on job satisfaction including gender, race, age, and marital status. Perryman (2004) found that amongst NHS staff in London, women had higher levels of job satisfaction than men, and those from ethnic minority groups were not as satisfied with their jobs as their white colleagues. In addition, it was reported that having a disability or a medical condition was related to lower job satisfaction. Research with nurses suggests that there are considerable low levels of job satisfaction amongst younger, male and ethnic minority nurses (Shields and Ward, 2001). Other determinants of job satisfaction have also been identified which pertain to characteristics of the job. For example, hours of work, size of the organisation, union membership and occupation have all been found to have a significant effect on self-reported job satisfaction (Shields and Ward, 2001). The length of time an individual has been employed by the organisation has also been found to have an effect on job satisfaction. For example, the NHS 2003 staff survey found that in Primary Care Trusts and Ambulance Trusts longer serving staff reported less satisfaction. The perception of fairness of pay is also negatively associated with job satisfaction, thus perceptions of relatively low pay can lead to decreased job satisfaction (Shields and Ward, 2001).

Opportunities for career advancement have also been found to be an important determinant of job satisfaction. Shields and Ward (2001) found that dissatisfaction among nurses with career progression opportunities had the largest effect on intention to leave the organisation. Perryman (2004) found amongst NHS staff in London, that feeling valued, having a good relationship with management and access to training were all related to higher levels of job satisfaction. In addition, feelings of being undervalued, having unclear promotion prospects, threats of redundancy, perceived lack of power, role ambiguity, role conflict, work overload or work pattern can all contribute to low levels of job satisfaction (Nelson and Burke, 2000; DeFrank and Ivancevich, 1998). Other issues not related to actual job duties or the job role can

affect job satisfaction, such as the ability to combine work and family life. Evidence suggests that existence of flexible working patterns for example is significantly related to job satisfaction; especially for female employees (Scandura and Lankau, 1997).

Increases in job satisfaction have also been found to be associated with job level (Robie et. al., 1998). Role autonomy and control have also been found to be important factors to job satisfaction (Aronson et. al., 2005). For example, supervisors in healthcare settings with low levels of job control, decision-making and work overload due to staff shortages, were found to have low levels of job satisfaction and high levels of work related stress (Brown et. al., 1999). Low levels of job satisfaction are associated with poor organisational outcomes such as turnover, poor teamwork and inefficiency (Shields and Ward, 2002). Job satisfaction has also been shown to be a predictor of job motivation (Ostroff, 1992). Job satisfaction is therefore important for employee and organisational well being. Although job satisfaction has been well researched in psychology, there are a number of areas within the subject that are not as well researched (Blyton and Jenkins, 2007). According to Blyton and Jenkins (2007) areas of job satisfaction that still need answers include the relationship between job satisfaction and different work outcomes such as performance and the extent life outside work influences satisfaction and vice versa.

Summary

It can be seen that motivation and person-environment fit are very much interrelated concepts which can enable researchers to understand people's individual differences and their work environment. This is important for understanding the career development of women since women are not a homogenous group and individual factors are important to consider when developing career models and understanding behaviours, attitudes and experiences. Job satisfaction is an important outcome to measure within career related research. Job satisfaction can have a significant impact on employees in terms of intention to leave, commitment and career advancement. Previous research on work satisfaction found that women express higher levels of both job and pay satisfaction than men (Clark, 1997; Young, 1999). Job satisfaction is an especially important consideration when looking at the careers of women and

especially women in male dominated occupations. Little research has been conducted into the area of organisational satisfaction especially in terms of women's careers. More research may reveal important insights into how organisational cultures differ and impact on women's experiences in the workplace.

1.6. Identity

The following section will discuss identity, social identity theory and gender role identity in the context of women in the work place.

1.6.1 Identity and social identity theory

Identity is a cognitive construct that represents the psychological importance of a role to a person's self concept (Stryker and Burke, 1968). People have multiple identities and people can have equal or unequal identification with these roles. Some theorists argue that a person will invest more time in a role they identify with as it provides a source of self esteem (Saleh and Hosek, 1976). Simpson and Carroll (2008) reviewed 'role' in processes of identity construction and suggest that: *'roles are intermediary translation devices in the dynamic, social processes of constructing identities'* (p43). Roles do not become identities but they mediate the meaning-making processes of identity construction. Roles both shape and are shaped by our identities in a dynamic and complex process. The importance of role in identity is evident by the continual usage of the term by individuals to explain their work and non-work activities.

According to identity theory, the core of identity is the categorisation of the self as an occupant of a particular role and the incorporation of the meanings and expectations that role holds (Stets and Burke, 2000). Identity theorists hypothesise that the higher the salience of an identity relative to other identities incorporated in the self, the greater the probability of behavioural choices in accordance with the expectations attached to that identity (Stryker and Burke, 2000). According to role salience theory, individuals invest more time and energy in roles which are more salient or important to their self identity or sense of self (Greenhaus and Powell, 2003). Identity theory is used quite prominently in the literature surrounding working women's conflicts

between work role and family role. For example Lobel and St Clair (1992) argue that people with salient career identities made extra effort at work and received more merit increases than those with family salient identities. The authors also found gender differences, in that, family orientated women with children received more merit increase than family orientated men with children did and that career orientated men received more increases than career orientated women. Suggesting that, men and women are rewarded for performing different functions, functions that fit with traditional gender stereotypes; men in the workplace and women in the home. Lobel and St Clair's findings also suggest that having a self-reported 'feminine' style was associated with lower salaries for women but not for men. This finding is supported by Johnson and Scandura (1994), who found from a study of accountants that having a self reported 'masculine' style was associated with lower salaries for women but not for men. The findings could be indicative that a feminine style is not desired in the workplace in either gender or that a masculine style is not desired in women.

Rothbard and Edwards (2003) using a structural equation model, looked at time investment in work and family roles and found that identification with a role was positively related to time invested in that role. The study also found gender differences. For example, men who devoted more time at work spent less time with the family, however those who spent more time with the family did not spend less time at work. For women, increased time in either work or family roles reduced time in the other role. The authors suggest that men perhaps have greater reserves of time for other roles aside from their work and family roles. Identity theory views identities as being arranged in a hierarchy, with the most salient taking precedence across multiple situations (Stryker and Serpe, 1994). However, Bird and Schnurman-Crook (2005) found that the participants in their study of dual-career couples identified highly to both work and family and attempted to match behaviour to both identity standards. Suggesting identity is a balance rather than a hierarchy and both genders employ coping strategies when family or work stressors threatened to disrupt these salient identities (Bird and Schnurman-Crook, 2005).

Research by Raskin (2006) looked to see whether work-family conflict could be identified as a component of identity formation among working mothers. The study was based on Erikson's (1968) conceptualisation of identity and how women develop

their relationship to the world of work. Erikson suggests that adult identity is formed through a series of psychosocial experiences that enable individuals to choose from a variety of roles. Erikson went on to suggest that this process occurs in two domains; occupation and ideology, and that identity development involves two processes engaging in exploration of one's self and the world, and making a commitment with respect to identity. Women's work identities have been increasingly shifting however their role of motherhood has remained unchanged. Women are still the main carers of children and the main homemakers (Raskin, 2006). For some women the question is therefore, how to develop a career identity whilst satisfying the expectations of being a traditional mother. For other women a career is too appealing and so the family expectations and obligations come second, if at all, and for others work is for economic reasons and not part of personal identity. Raskin concluded that conflict as an identity element is more a function of education and income than individual differences. The meaning of work-role was central to the working mother's perceptions of work-family conflict.

In regards to turnover intent, Raskin's study found that the less personal meaning a career had for a working mother, the higher the turnover intent. The study also found that regardless of career salience and individual differences related to work attitude, working mothers in a supportive, family friendly organisation were less likely to intend to quit their jobs. Raskin argues that research on women's identity formation has previously focussed on adolescence and not adult women and the multiple roles of working women. Career salience is one construct that specifically permits identification of the importance of work to the individual. Not all women will view work as an intrinsic source of satisfaction, therefore the relative importance of work and family might be different for women who view work as more central. Traditionally, wife and mother are viewed as the most salient roles for women. So from this view point, never married women and/or childless women shape their identities from other life roles. These women contradict common assumptions that childless people have nothing constraining in their lives but a commitment to work (Raskin, 2006).

According to social role theory the role behaviour of group members shapes their stereotypes, thus, groups should have dynamic stereotypes to the extent their typical

social roles are perceived as changing overtime (Diekmann and Eagly, 2000). Therefore, sex differences should be eroding because of the increasing similarities in the roles of men and women and due to the changing nature of female roles. The female stereotype should be particularly more dynamic than men's. Men have not entered the domestic role to the extent that women have entered the paid labour market (Shelton, 1992). Men have also not entered female dominated occupations to the same extent that women have entered male dominated occupations (Reskin and Roos, 1990). Therefore Bem's sex role inventory should be changing more from feminine to masculine than masculine to feminine (Diekmann and Eagly, 2000). Diekmann and Eagly (2000) found that women now, more than in the past, were perceived more masculine and women will, in the future be more masculine than women at present. Feminine characteristics were seen to decline in women rather than increase in men. Therefore, stereotypes can be dynamic forces which can serve social change (Diekmann and Eagly, 2000). It might also be construed that women are becoming more masculine to fit into a male, patriarchal society.

Social identity theory suggests that individuals classify themselves into various social categories and engage in different roles associated with these categories that form the individual's sense of self or identity. Individuals may have many social identities and social roles and collectively these roles and identities form a person's sense of self (Ashforth and Mael, 1989). Through social comparison, persons similar to the self are the in-group and those who differ are the out-group (Stets and Burke, 2000). In social identity theory, the central causal process in behaviour derives from in-group and out-group differentiation, not the roles or identity traits as such that are attributed to in-group and/or out-group (Abdelal et. al., 2005). Social identity theory defines social identity as the conception a person has of being part of a group (Tajfel and Turner, 1986). For Tajfel and Turner, in-group favouritism and out-group 'discriminations' are based on the tie between personal identity and the group one belongs to. Within self categorisation theory (Turner et. al., 1987), categorisation (of self and of others) occurs at different levels of abstraction (human, social, personal identity). When the process occurs at the social identity level, the prototypic and stereotypic character of the group is accentuated; there is an increase in the perceived similarity between oneself and others. Only the prototypes are considered important

in defining a positive identity measurable with the out-group (i.e. childless women viewed as deviant).

Social roles enable individuals to form a sense of self in relation to society. Within these roles are role expectations which are the duties and obligations associated with the role (Ashforth and Mael, 2001). Due to this, roles create patterns of behaviour which have a measure of predictability. According to the interactionist perspective roles are not fixed or prescribed but something that is constantly negotiated by individuals (Blumer, 1969; Mead, 1934). Identity integration refers to the degree to which two social identities are viewed as compatible or not with each other (Sacharin et. al., 2009). Sacharin et. al. (2009) wanted to understand how individuals manage multiple social identities. They looked at gender and the work identities of business school students and how their identity integration influenced how they react to both gender and professional environmental cues. Individuals with high integration do not find it difficult to identify with two groups simultaneously. However, less integrated people feel conflict between the two identities despite identifying strongly with both. Dis-identifying with one or more of the conflicting identities is one strategy individuals can employ to dissolve conflict (Roccas and Brewer, 2002). Sacharin et. al. found that differences in identity integration between the two identities influence how female business student's process information once their work identity is made salient through environmental cues. The research helps to show how identity integration can be utilised to understand how people manage conflicting identities across multiple domains.

Male roles are usually viewed more important and therefore given higher status than female roles (Lorenzi-Cioldi, 1996). Therefore, it is the differences in status associated with groups that guide both men and women's self and other evaluations and not their specific gender characteristics (Lorenzi-Cioldi, 1996). Recently, Lynch (2007) suggested that people organise and negotiate daily amongst a number of diverse roles and as such people role switch and role overlap regularly as part of their everyday lives. Lynch argues from a socio-cognitive perspective for a more integrated approach to roles where: *'it is recognised that persons affect situations and situations affect persons such that the unfolding of time produces continuous changes in role identification dynamics'* (p380).

1.6.2 Gender role identity

Gender or sex role identity refers to the self concept of being masculine or feminine (Storms, 1979). The term gender role identity within psychology refers to how one's personality and behaviour are determined by their gender. There are a number of measures of gender role identity. For example, in 1979 Storm developed a three item masculinity scale and a three item femininity scale to measure gender role identity. Another commonly used measure within the literature is the Personal Attributes Questionnaire developed by Spence, Helmerich and Stapp (1975). The Personal Attributes Questionnaire (PAQ), measures stable underlying personality traits associated with masculinity and femininity through a fifty-five item self-rating questionnaire. Spence et. al. proposed that people's self-ratings of masculinity and femininity will be correlated with their perceptions of sex role stereotypes. However, perhaps the most commonly used measure is the Bem Sex Role Inventory (BSRI, 1974) and as such will form the main focus of this section of the literature. Although Bem referred to the measure as sex role identity, for the purpose of this thesis the term gender role identity is preferred, since sex tends to refer to the biological, whereas gender refers more to the culturally/socially constructed state like traits associated with the different genders.

The BSRI measure determines if a person has a masculine (high masculine and low feminine), feminine (high feminine and low masculine), androgynous (high masculine and high feminine) or undifferentiated (low masculine and low feminine) gender role identity by asking participants to measure themselves on a seven point Likert scale. The original measure contains sixty characteristics; twenty masculine, twenty feminine and twenty neutral. Bem's initial examination of the twenty masculine and twenty feminine items yielded high internal consistency (masculine .86 and feminine .80), and the test-retest reliabilities were also high (masculine .90 and feminine .90). According to Lippa (1985 see Hirschy and Morris, 2002) the BSRI has an internal reliability of .75 for the femininity scale and .87 for the masculinity scale when using female participants and .78 for the femininity scale and .87 for the masculinity scale when using male participants.

In 1981, Bem developed a shorter version of the BSRI, with ten masculine and ten feminine characteristics, with some versions also including ten neutral items. The shorter version has been found to yield more reliable scores than the larger version (Campbell, Gillaspay and Thompson, 1997). Campbell, Gillaspay, and Thompson (1997) used confirmatory factor analysis (CFA) to explore the construct validity of the BSRI scales with University students in the USA. Using LISREL covariance structure analyses for CFA (Joreskog and Sorbom, 1989), the authors investigated measurement characteristics of both long and short forms of the BSRI and identified that the short form yielded more reliable scores and was conceptually sound (Campbell et. al., 1997). The short versions internal consistency has been reported as being higher than that of the longer form, and the correlations between the long and short forms are impressively high (Hoffman and Borders, 2001). Masculinity is measured by ten items; independent, defends own belief, assertive, strong personality, forceful, has leadership abilities, willing to take risks, dominant, willing to take a stand, and aggressive. Femininity is measured by ten items; affectionate, sympathetic, and sensitive to the needs of others, understanding, compassionate, eager to sooth hurt feelings, warm, tender, loves children, and gentle.

Since its development over 30 years ago the reliability and validity of the BSRI (both long and short versions) and its relevance to men and women today has been brought into question (Wilcox and Fancis, 1997; Holt and Ellis, 1998; Choi et. al., 2003 and 2007). In 1998, in a partial replica of Bem's original 1974 study, Holt and Ellis revalidated 38 of the 40 original items by showing that both men and women considered them differently desirable for men and women. However, they did suggest that the traditional gender roles may be weakening. Previous research has looked into what constructs the BSRI actually measures. Some authors suggest that instead of measuring a global construct of masculinity and femininity, the BSRI actually measures instrumental and expressive traits (Spence, 1983; Spence and Helmreich, 1981 and Adams and Sherer, 1985). Adams and Sherer (1985) found that both masculine men and women were more psychologically adjusted then those classified on the BEM scale as androgynous, feminine or undifferentiated. Furthermore, in an attempt to define the concept of masculinity measured by the BSRI by looking at its relationship to both self-efficacy and assertiveness, the authors found masculinity to be related to assertiveness and self-efficacy, and high levels of feminine traits as

being associated with a lowered sense of personal effectiveness. Adams and Sherer support Spence's earlier (1983) assertion that the masculinity scale of the BSRI measures the instrumental aspect of masculinity. More recently, Choi and Fugua (2003) studied twenty-three validation studies of the BSRI and suggest that masculinity and femininity are not adequately operationalised in the BSRI. They suggest that the nature of masculinity and femininity is more complex than it is measured in the BSRI and that the BSRI does not capture this complexity. Of the studies they looked at only 23% of the samples used were non-college samples. The authors suggest that sex role orientation: *'may require different structural definitions as one moves from one group to another'* (p883). The findings of this 2003 study also reveal that the factor patterns of desirability ratings for others measured by the BSRI is clearer than the same participants self-ratings. Again, suggesting the complex nature of the constructs; masculinity and femininity. Choi, Fugua and Newman (2007) from an American study with undergraduate and graduate students, developed a hierarchical factor structure model with seven first order factors and two second order factors (masculinity and femininity), suggesting that gender role identity as measured by the BSRI is hierarchical and multidimensional in nature. They also found the masculine factor to be more complex than the feminine factor, which is consistent with previous findings (Blanchard-Fields, Suhrer-Rousset and Hertzog, 1994). Choi et. al. therefore, argue against a global measure of masculine and feminine and suggest researchers should take into account the multifaceted structures of masculinity and femininity.

Bem (1981b) responded to Spence and Helmreich's criticism, stating that the BSRI is a tool for identifying sex typed individuals and that the BSRI reflects different things for different people. Bem suggests this may tap into the instrumental and expressive traits of some people. In 1981, Bem (1981a) put forward her gender schema theory. The theory has been found as being a valid and reliable measure of the gender schema construct (Larsen and Seidman, 1986). The theory proposes that:

'Sex typing is derived, in part, from gender schematic processing, that is, from a readiness on the part of the individual to encode and to organise information-including information about the self in terms of the cultural

definitions of maleness and femaleness that constitute the societies gender schema' (Bem, 1981b, p369).

Despite the continual debate regarding the reliability and validity of the BSRI it is still widely used in psychological research and an individual's gender role identity has been associated with a number of other psychological constructs. According to early research by Ickes and Layden (1978), people with high self esteem are more likely to attribute their success to internal causes and their failure to external causes, than people with low self esteem. Furthermore, men are more likely to have an attribution style similar to a high self esteem individuals and women with low self esteem individuals (Ickes and Layden, 1978). Whitley (1983) conducted a meta-analysis of thirty-five studies investigating the relationship between gender role identity and self esteem. Results indicated that masculinity and self esteem were highly correlated. However, Whitley suggests that this relationship depends on the measures of both self esteem and gender role identity used. The study found lower correlations between gender role identity and self esteem when the BSRI was used compared to the PAQ (Personal Attributes Questionnaire).

It has been suggested that the trait measures of masculinity cannot be discriminated from measures of self esteem (Whitley, 1988) and may therefore be measuring the same construct, resulting in a large correlation, or even self esteem could be an integral part of masculinity. In a later study, Whitley and Gridley (1993) further elaborated on earlier findings and found that although masculinity, self esteem and depression were separate, they were highly correlated. Whitley and Gridley put forward that the three constructs are components of a higher construct, that of the 'negative affectivity' factor from the 'big five' personality theory (Costa and McGrae, 1992). Other studies have focussed on the BSRI in terms of women's careers. For example, in 1989 Long looked at gender role identity, coping strategies, self-efficacy and stress for women in male dominated and female dominated occupations. Long found that women with high masculinity had significantly lower levels of anxiety and strain, and higher self-efficacy and coping than low masculinity women. Low feminine women in non-traditional occupations had higher self-efficacy and greater coping than women with low feminine in traditional occupations. Bem (1974) suggested that high sex-typed individuals are uncomfortable performing cross

sex tasks since it is incongruent with their sex role orientation. Long suggests that women with high masculine sex role orientation experience less strain and cope more effectively in masculine occupations. In addition, Long found that masculinity and self-efficacy were positively correlated and interrelated. Lower self-efficacy was related to low femininity in traditional compared to non-traditional occupations, suggesting that self-efficacy is a precursor to instrumental coping as proposed by Bandura. More recently, Hirshy and Morris (2002) investigated the relationship between individual differences in attributional style, self-efficacy, self esteem and gender role identity in 163 American undergraduate students. They found that masculinity was important in the prediction of the success attributions of women more than that of men. Hirshy and Morris also suggest that although they found masculinity to be positively associated with attributional style, it may indeed be an instrumental style that accounts for self affirming attribution outcomes.

1.6.3 Cross-cultural studies of the BSRI

It would seem that the BSRI is a valid measure of gender role identity for some groups but not for others (Konrad and Harris, 2002). There have been a number of studies looking at the cross-cultural reliability and validity of the measure (Katsuranda and Sugihara, 1999; Zhang, Norvilitis and Jin, 2001; Ozkan and Lajunen, 2005; Peng, 2006) with very different findings. For example, Katsuranda and Sugihara (1999) found, from a sample of college students, the BSRI to be a valid measure in Japanese culture. In contrast, Harris (1994) found the BSRI to be a valid measure for American culture, but found it to be a less valid measure among Hispanic Americans and African Americans. Harris concluded that ethnic populations in America need their own BSRI, in a similar way as a number of countries have developed their own version of the inventory e.g. Tzurriel (1984) developed an Israeli BSRI; Antill et. al. (1981) developed an Australian BSRI and Zhang et. al. (2001) developed a Chinese BSRI. Wilcox and Francis (1997) in a study of 16-19 year old female students in England found that only three of the masculine and three of the feminine characteristics were valid; in that they distinguished between what is desirable between men and women. These results could suggest that the BSRI is no longer a valid measure or at least not with this population. A reason for these findings could be due to the changing role of women

in English society. For example, Twenge (1997) suggests that women are increasingly endorsing masculine traits, however men continue to non-endorse feminine traits.

Zhang, Norvilitis and Jin (2001) wanted to test the validity and reliability of the measure on Chinese culture and develop a short version of the BSRI. Using a sample of American and Chinese college students the authors found that the original BSRI showed high reliability in the American sample (masculinity .87 and femininity .85). On the other hand, the alpha values in their Chinese sample were not as high (masculinity .81 and femininity .68). In particular, the femininity subscale appears not to be as cohesive a dimension for this scale in the Chinese sample. However, from a theoretical standpoint, the reliabilities of the BSRI masculine and feminine scales within the two samples are both acceptable (Nunnally, 1978) and comparable to reliabilities found in previous studies (see Bem, 1974). With regards to validity, the measures were not acceptable and so the authors developed a short version of the BSRI with eight masculine and eight feminine characteristics. According to Zhang et. al.: *'the short form should be described as measuring male and female gender role orientation instead of "masculinity" and "femininity," because the concepts in the two lists are hardly represented by those terms'* (p248).

It has been suggested that college students may be overly homogeneous in tests of the BSRI (Choi and Fuqua, 2003). In response to such claims, Peng (2006) used four different occupations in his study sample; college students, nurses, police officers and managers in Taiwan to test the measure. Peng found the internal consistency of the measure satisfactory for Taiwanese culture, and that the structure of the BSRI is more complicated than proposed by Bem. Peng also found that the BSRI may not be as effective in differentiating gender role orientations in Taiwan as it is in many other cultures. Although the men scored higher than the women on all of the masculine items, the women did not score higher than the men on any of the feminine items. What is interesting from this study is that contrary to common belief, the police were not the most masculine and the nurses were not the most feminine among the subgroups of the study. Peng put forward that these results suggest that social change takes place in gendered occupations. For example, in a drive to appear less 'cold' the Taiwanese police changed their logo to a dove rather than a symbol that is tough and

masculine such as an eagle or a lion. Peng suggests that the police not only outwardly promoted a 'softer' image but that the police themselves internalised the image.

In a study of Turkish University students, Ozkan and Lajunen (2005) found the short form of the BSRI to be a reliable and valid measure of gender role identity since men scored higher on the masculine and women on the feminine measures. One of the most striking findings of this study is that some masculine characteristics (i.e. independent, assertive, strong personality, has leadership abilities, willing to take risks, dominant, self-sufficient, defends own beliefs) are now desirable for both sexes. This result might reflect the socialization process and a change in values within Turkish students.

Summary

Both social identity theory and identity theory have been used to understand women's careers, especially in terms of work life balance and work-family conflict. Both are important theories of the self and enable a framework for understanding self identity and how it relates to other individual and environmental factors within different social contexts, such as the workplace. In terms of gender role identity, it would seem that there is controversy over the reliability and validity of using the BSRI in empirical research. Despite this controversy it is apparent that the BSRI is a widely used instrument of gender role identity (Powell and Greenhas, 2010). However, it is predominantly used on student populations with the original study conducted on students (Bem, 1974). It has been suggested that college students may be overly homogeneous in tests of the BSRI (Choi and Fuqua, 2003). Some recent notable exceptions relevant to the thesis include Long, (1989) with a study sample of women in numerous male and female dominated occupations, Peng (2006) with sample of male and female college students, police officers, nurses and managers and Powell and Greenhaus (2010) whose sample was male and female managers.

1.7 The self, career and gender issues

The following section will look at some other psychological constructs of relevance to women's careers and career development. These constructs are self-efficacy and self esteem.

1.7.1 Self-efficacy

The key concept in the theory, self-efficacy was defined by Bandura (1986) as: *'people's judgements of their capabilities to organise and execute courses of action required to attain designated types of performances'* (p391). Central to Bandura's self-efficacy theory is the focus on expectancies for success. Bandura distinguished between two types of expectancy beliefs; outcome expectations; which are beliefs that certain behaviours will lead to certain outcomes and efficacy expectations and the belief about whether one can effectively perform the behaviours necessary for the outcome. Changes in self-efficacy beliefs will lead to changes in occupational interests (Lent et. al., 1994). Self-efficacy is important to women's career development. According to Betz and Hackett: *'there exist significant and consistent sex differences in self-efficacy with regards to traditional and non-traditional occupations'* (Betz and Hackett, 1981, p407). Some suggest that high self-efficacy can have a circular or reciprocal effect, in that, high self-efficacy facilitates performance and successful performance nurtures self-efficacy (Gist and Mitchell, 1992). Self-efficacy predicts actual performance in a broad range of settings and so raising self-efficacy can have practical consequences for the productivity of individuals in organisations. Once in a job negative beliefs about your abilities may reduce the willingness to take risks, and reduce the desire to be visible; both of which can hinder career progression (Heliman, 1983). Hence self-efficacy is important in the workplace for both men and women.

A fundamental prediction of Social Cognitive Career Theory is that self-efficacy and outcome expectations both directly affect occupational choice (Lent et. al., 1994). This prediction has had numerous support. For example, Betz and Hackett (1997) in a review of self-efficacy literature found over a hundred studies which support the following three hypotheses. Firstly, that lower career related self-efficacy

expectations were a major factor in explaining the underrepresentation of women in traditionally male dominated career areas. Secondly, women have lower efficacy expectations than men with respect to traditionally male content domains. Thirdly, that this difference in self-efficacy expectations is a partial explanation for gender differences in vocational interest development. In general, people are more interested in things that they show the greatest ability and vice versa. Individuals with similar occupational interests may value different aspects of the occupational environment and they may pursue different goals (Johnson and Bouchard, 2009). In a longitudinal study of 1007 students and parents in the US, Bleeker and Jacobs (2004) found that mothers earlier perceptions of their adolescent children's abilities was related to their children's math-science self-efficacy and twelve years later with career choice. Betz (2007) highlights some of the recent work done in the area of career self-efficacy. Concluding that Bandura's theory is: *'simple yet powerful, lends itself nicely to operationalization and hypothesis generation and testing, and has both theoretical and practical relevance and application'* (p 418). However, despite previous support Nauta and Epperson (2003) found that outcome expectations, but not self-efficacy for science, math and engineering activities were predictive of leadership aspirations in those career fields.

There have been a number of different scales developed to measure self-efficacy depending on the domain or type of self-efficacy in question. For example, Rigotti et al. (2008) developed a short version of the occupational self-efficacy scale originally developed by Schyns and von Collani (2002), which the authors claim assesses occupational self-efficacy across five countries. Task specific self-efficacy has also been found to be a better predictor of self limiting behaviour in women than global self esteem (Dickerson and Taylor, 2000). Some authors have developed a more general self-efficacy scale (Chen, Gully and Eden, 2001). However, Bandura disagrees in the use of general self-efficacy scales, since he argues that efficacy is task specific and therefore should be measured as such.

Self-efficacy has been previously associated to people's careers in a number of ways. For instance, Van Vuuren, de Jong and Seydel (2008) found organisational self-efficacy contributed to organisational commitment. Ton and Hansen (2001) found job satisfaction mediates the relationship between values and interests and they found

the same to be true for marital satisfaction. Betz, Borgen and Harmon (2006) found both personality and vocational confidence contributed to the prediction of occupational group membership. Depending on the occupation, personality or confidences are the most prominent contribution. Personality, confidence and interests have relevance to occupational choice but the relevance of the importance of each variable differs depending on the occupation (Betz, Borgen and Harmon, 2006). Thus, indicating that personality could add to the Social Cognitive Career Theory. Using LISREL analysis, Van Vianen (1999) found that ambition for a managerial position was mainly explained by managerial self-efficacy. This self-efficacy was influenced by performance attainment, physiological arousal, and verbal persuasion. Bandura (1986) argued that self-efficacy expectations can be facilitated through four informational sources; performance attainment, vicarious experience, verbal persuasion and physiological arousal. However, Van Vianen's study did not find vicarious experience as having any contribution to managerial self-efficacy contrary to Bandura's beliefs (1986). In Addition, Van Vianen's study also found a positive relationship between work-role salience and ambition for a managerial position. This finding lends support to previous research that found work-role salience is important for career motivation (Greenhaus and Sklarew, 1981).

Nauta and Kahn (2007) put forward that identity status is related to career decision self-efficacy and differentiation of interest. The study of American college students found that the degree to which an individual has engaged in, and committed to an identity has positive implications for their career decision self-efficacy. Whereas, exploring without commitment or committing without exploration is associated with lower self-efficacy. According to Taylor and Betz (1983), people may have difficulty making career decisions if they lack career decision self-efficacy. However, Creed, Patton and Prideaux (2006) in an American longitudinal study of high school students, found that a change in career decision making self-efficacy was not associated with a change in career indecision over time. These findings suggest that there is no causal relationship between career decision making self-efficacy and career indecision as hypothesized by SCCT. Other research has found that the difficulties in career decision making is similar for adolescents and adults alike (Albion and Forgarty, 2002).

From a meta-analysis, Rottinghaus, Larsen and Borgen (2003) found self-efficacy and interests are independent constructs that correlate moderately. The study found that the self-efficacy and interest linkage is strong across all of Holland's RIASEC domains. Self-efficacy and interests were found to have a reciprocal effect on one another. However, Rottinghaus et. al. argue that researchers should consider differences in the relationship such as age, since this may moderate the relationship. Self-efficacy has also been shown to be affected by the value placed on a role. For instance, Cinamon, Weisel and Tzuk (2007) investigated work-family conflict of sixty couples in Israel. They found that working parents with high self-efficacy in their parenting role were associated with the higher value they attributed to that role. They did however find that mothers showed high levels of conflict when work interfered with their family and lower self-efficacy, than fathers. Suggesting that women's need to combine work and family roles can damage their self-evaluation.

The majority of studies investigating self-efficacy view high levels of self-efficacy as a positive thing. High self-efficacy is not, however, always a desirable thing. High self-efficacy can create complacency which in turn decreases performance (Vancouver et. al., 2001). However in response to Vancouver et. al.'s findings, Bandura and Locke (2003) concluded that Vancouver et. al.'s contradictory findings were due to the experiment itself. Vancouver et. al.'s findings do indicate that more research is needed to investigate any possible negative performance outcomes of high self-efficacy.

1.7.2 Self esteem

Rosenberg (1965) describes self esteem as a personal sense of worthiness that is experienced as positive or negative attitudes directed toward the self, in particular beliefs about being valuable and capable. Branden (1969) defined positive (high) self esteem as a relationship between the individual's competencies in coping with the fundamental challenges of life and worthiness, in relation to happiness, and doing so consistently over time. In terms of positive (high) self esteem therefore, self esteem is related to personal confidence in the potential to learn, make appropriate choices and decisions, and respond positively to change. It is also the experience that success, achievement, fulfilment and happiness, are right and natural for us. In this respect,

self esteem incorporates emotional, evaluative, and cognitive components. Self esteem represents an overall value an individual places on themselves as a person (Judge et. al., 1997). The maintenance and enhancement of self esteem is viewed as a primary motive of human behaviour (Brown and Dutton, 1995). Self esteem can be seen as an underlying dispositional tendency; trait self esteem which is long term or as a transient psychological condition, state self esteem which is short term and situational (Leary and Baumeister, 2000; Hogg and Cooper, 2003). Self esteem is important in the workplace. To have work and be respected by others in work is central to an individual's well being and to working effectively (Abood and Conway, 1992).

Favourable self-evaluation indicates high self esteem and low self esteem is the result of an unfavourable definition of the self (Baumeister et. al., 2003). People with high self esteem tend to be extravert, agreeable, conscientious, emotionally stable, open to new experiences and they ascribe themselves socially desirable traits (Robins et. al., 2001). Whereas in converse, people with low self esteem lack confidence, avoid new experiences and tend to be more introvert (Robins et. al., 2001). People with high self esteem have also been found to show greater persistence in the face of adversity compared to people with low self esteem (Hogg and Cooper, 2003). Self esteem has also been found to have an impact on mental health; with individuals with high self esteem being less vulnerable to depression (Harter, 1993) and anxiety (Greenberg et. al., 1997). High self esteem individuals have also been found to be more resilient to self image threats (Spencer et. al., 1993), they are more likely to savour positive affect (Wood et. al., 2003) and they tend to perceive negative feedback more as a challenge than a threat (Seery et. al., 2004). With regards to careers, high self esteem has been found to increase coping and goal achievement, both of which are valuable within the workplace (Bednar et. al., 1989).

Although high self esteem is often equated with positive outcomes, Baumeister, Smart and Boden (1996) looked at the negative side of high self esteem. They found high self esteem can be equated with narcissism, arrogance, conceit and egotism. A number of studies by Jordan et. al. (2003) distinguished between individuals who have a secure positive (high) self esteem, and those with a defensive high self esteem. The studies concluded that individuals in the former category possess positive self-

views that are confidently held. Such individuals feel good about themselves without requiring continual affirming appraisals from others to maintain their positive (high) self esteem. Those in the latter category on the other hand possess positive self-views that are tenuous and susceptible to threat. Such individuals are in possession of pre-conscious self-doubts and insecurities, and are prone to respond extremely negatively if criticised.

1.7.2.1 Gender differences in self esteem

Inconsistent and contradictory findings have been found between women and men with regards to self esteem. Some studies have reported males to score higher than females (e.g. Fertman and Chubb, 1992), while other studies have found the converse (e.g. Connell, Spencer and Aber, 1994) or identified no differences between the genders (e.g. Greene and Wheatley, 1992; Tang et. al., 2000). Even through meta-analysis there are contradictory findings. For instance, Kling et. al. (1999) identified a small difference which favoured males when looking at global self esteem. Whereas, Hattie (1992) found little evidence of gender differences in overall self esteem, but did find differences existed with more task specific self esteem. For instance, Hattie reported that males had higher self esteem with regards to maths and lower verbal self esteem than females. More recent research has found gender differences to exist between managers, with males showing higher self esteem than females (Kundu and Rani, 2007).

Roberts and Nolen-Hoeksema (1989) conducted an experiment designed to determine if evaluative feedback influenced women's perception of their abilities more than men, in relation to a series of cognitive tasks for which they were provided with positive or negative feedback. Participants were asked how confident they were that they could carry out the task, and asked to rate their level of satisfaction with their performance prior to and following receipt of appraisal. The study found that women's confidence changed markedly in the direction of the appraisal, whereas that of the male participants was generally free from the influence of appraisal. In addition, women were far less satisfied with their performance following negative appraisals in comparison to positive appraisals, and generally underestimated their performance. Males' satisfaction with their performance, on the other hand, was

immune to appraisal. Males also seemed to overestimate their performance, particularly in the negative evaluative feedback condition. In this respect, women are more likely to experience diminished self esteem, negative effect and are more prepared to modify their behaviour in response to negative evaluative feedback than men (Roberts and Nolen-Hoeksema, 1989). Kendler, Gardner and Prescott (1998) found that individual variations in self esteem in both women and men were best explained in terms of genetic and individual-specific environmental factors. The authors concluded that a significant proportion of the population variance in self esteem is caused by genetically driven dispositional variables that are the same in women and men. These findings differ significantly from the majority of the self esteem literature, which tends to suggest that men and women differ due to individual differences associated with socialisation and cultural expectations.

Self esteem can be global or task specific (Simpson and Boyle, 1975). Work and organisational based self esteem plays a significant role in determining employee motivation, work related attitudes and behaviours (Pierce and Gardner, 2004). In 1989, Pierce, Gardner, Cummings and Dunham introduced the concept of organisational based self esteem (OBSE). OBSE refers to the degree an individual believes themselves capable, significant and worthy as an organisational member. Recent research found work based self esteem positively correlated with job involvement, again highlighting the importance of high self esteem in the workplace (Cortis and Cassar, 2005). Self esteem may be viewed as domain-specific, which Leary and Baumeister (2000) describe as setting the individual's appraisal of her/his value within a particular domain, such as the work, family or social domain. In relation to the domain of work, Pierce et. al. (1989) introduced the concept of organisation-based self esteem, which they defined as the individual's evaluation of her/his value and worthiness as a member of an organisation. The authors argued that if self esteem were to be viewed within a specific domain then it would be a superior predictor of outcomes in the workplace than commonly employed global measures. This view is supported by Hough (2003), who maintains that measures which focus upon particular domains, generate higher criterion related validities and fewer error variances than those employing generalised measures. Cognitive research in the area of self-concept, which maintains that the individual's self-view is context dependent also gives credence to this stance (Kuhnen and Oyserman, 2002).

The concept of domain specific self esteem presents the opportunity to examine organisation or work-based gender differences in self esteem. However, such differences must be considered within the context that societal, and cultural prejudices often lead to the disparate treatment of women (Lobel, Mashraki-Pedhatzur, Mantzur and Libby, 2000). Thus, women have to deal with discrimination, low salaries and poor employment opportunities (Lamsa and Sintonen, 2001). Also, despite the fact that women increasingly access managerial posts, male authority still seems to be favoured and rewarded (Trentham and Larwood, 1998). This leads to the marginalisation of feminine attributes (Billing and Alvesson, 2000). In this respect the: *'stereotypical woman is perceived to be lacking traits such as leadership ability, competitiveness, self-confidence, aggressiveness, and ambition, all of which are considered desirable for managers'* (Javidan et. al., 1995, p 1275). However, where women do carry out their occupational duties confidently and assertively, they are generally not as well received as men who behave in the same manner (Butler and Geis, 1990).

In terms of intra-gender differences in self esteem, career oriented women have been found to have more positive (high) levels of self esteem, than home oriented women (Tinsley and Faunce, 1980). Also, women possessing positive (high) self esteem have been found to hold less traditional attitudes than those with less self esteem. It is considered that this may arise as those women who possess negative (low) self esteem, also lack the confidence required to assume, or promote non-traditional roles for themselves and other women (Harrison, Guy and Lupfer, 1981). In relation to inter-gender variations in self esteem, positive (high) levels of self esteem is typically found in those women who are employed in male dominated occupations; however, women tend to underestimate their talents and skills and their potential future work-related performance.

Cultural influences have also been identified as influencing inter-gender variations in self esteem within the occupational domain. For example, Valentine (2006) conducted a study of American Hispanics in order to determine whether acculturation, or: *'the extent to which an individual originating from another culture has integrated in the host culture'* (in Manrai and Manrai, 1995, p 120), mediated a proposed negative relationship between self esteem and traditional gender outlooks.

Traditionally within Hispanic cultures a woman's role is more suited to the domestic environment (Del Castillo, 1980), and Hispanics with negative (low) self esteem may be threatened by employed women who succeed in organisations as they represent a threat to the status quo (Valentine and Fleischman, 2003). However, Valentine (2006) discovered self esteem and acculturation to be positively related, with self esteem being unrelated to gender. Also, in terms of cultural influences upon intra-gender variations in self esteem, Azar and Vasudeva (2006) in an investigation of self-efficacy and self esteem of employed and unemployed married women in Iran, found that professionally employed women experienced significantly higher levels of both self-efficacy and self esteem than unemployed and non-professionally employed women.

As previously outlined, the findings in relation to evaluative appraisal, or feedback, are pertinent to gender in the workplace and to self esteem outcomes. Johnson and Helgeson (2002) investigated gender differences of evaluative feedback among bank employees who were subject to their annual performance appraisals. The study concluded that even though women and men received similar evaluation scores, men's self esteem was relatively immune to the nature of the appraisal, whereas women's self esteem improved slightly following positive appraisal, but diminished markedly following negative appraisal. This could perhaps mean that women are more responsive to feedback than men or that women are less confident than men in certain tasks.

Kram and Hampton (1998) examined the self esteem of women in leadership roles, and suggest that due to their minority status in leadership roles, their heightened visibility is accompanied by a severe scrutiny of their performance, and pressure to subscribe to the status quo (Kanter, 1977). In addition, when women assume leadership roles within an organisation, for members of that organisation, there may be a clash of preconscious stereotypes regarding women with preconscious expectations of the role of the leader (Eagly, Karau and Makhijani, 1995). This results in the general anxiety of the group being raised, due to the fact that as the leader is a woman, she is perceived as being inherently vulnerable (according to particular culturally held stereotypical views), which translates into the perceived vulnerability of, and threat to, the whole group. Kram and Hampton (1998) term this

process the visibility – vulnerability spiral. They argue that if individuals are to understand and successfully cope with the visibility – vulnerability spiral, they must avoid an internalising response, which involves devaluing, or denying facets of the self, and can result in self-blame, pressure to conform, attempts to be accommodating, and a loss of self esteem. Similarly, an externalising response (more commonly found in men) is to be avoided, in which the reaction to heightened visibility and criticism is to project blame outside of the self and effectively blame the system. Such a response is characterised by confrontation and diminished personal learning. Although by means of the externalising response, positive (high) self esteem is maintained, it may well be characterised as being unstable, narcissistic and defensive in nature. Kram and Hampton (1998) offer an alternative to the internalising and externalising responses, in the form of the integrating response, which necessitates the capacity to be vulnerable in a proactive sense, and entails the ability to embrace opportunities to gain insights into, and learn about one’s self in terms of assets and deficits, and employ this new knowledge to effectively modify one’s strategies. The integrating approach is viewed as possessing the ability to employ interpretive skills for complex understanding, listening, empathising, and for empowering both the self and others (Argyris, 1985).

Summary

The processes of gender related self-efficacy and self esteem are complex, multifaceted and heterogeneous. Within the workplace women, particularly those in managerial or leadership roles may be at a disadvantage due to the societal and cultural prejudices that they meet within the working environment. Women often receive disparate treatment within organisations where the authority of their male colleagues still seems to be rewarded and favoured. However, neither self-efficacy or self esteem are static phenomena, both can change depending on domain, experiences and over the lifespan. Self esteem and self-efficacy are distinct yet related constructs (Hogue et. al., 2010). Both are viewed as aspect of a persons’ self-concept. Recent research by Hogue et. al. (2010) found that self-efficacy is one aspect of the self concept which moderates the impact of gender and gender stereotypes on pay expectations, whereas global self esteem does not.

1.8 Career factors

The next section will look at the literature surrounding women's careers in relation to barriers and drivers to career progression, promotional issues and women in senior/leadership roles.

1.8.1 Career progression, promotion and aspirations

Career success can be either subjective or objective (Ng et. al., 2005). Objective career success is usually externally measured through things such as highest level attained, highest salary earned, and professional honours. Subjective career successes on the other hand are typically attitudes, emotions or perception of how the individual feels about their accomplishments; which previous researchers have measured via job satisfaction, organisational commitment and professional identity (Feldman and Ng, 2007). Women and men tend to use different kinds of measures for assessing their own career success. Men tend to use more objective measures such as level and salary, whereas women tend to use more subjective measures including satisfaction with their work and non-work lives; which also includes opportunities for advancement and work life balance (Powell and Butterfield, 2003). Career aspirations are important to consider when looking at women's advancement and career development. According to Mayrhofer et. al. (2005):

'Career aspirations reflect the strength of an individual's intention to be active in a particular career field. They consist of a cluster of needs, motives and behavioural intentions that individuals articulate with respect to different career fields' (p40).

Mayrhofer et. al. (2005) put forward that career aspiration is a form of self-selection since individual's self-select success in a field dependent on personal strengths and weaknesses. Career aspirations are influenced by many factors including gender, socioeconomic status, race, parent's occupation, educational level and expectations (Domenico and Jones, 2006). One predictor of career aspiration is gender identity. Women with more masculine characteristics and lesser feminine characteristics are more likely to reach top management (Powell, Butterfield and Parent, 2002). Powell

and Butterfield (2003) using the short form of the BSRI found that high masculinity but not low femininity was associated with aspirations to top management positions, with men aspiring to these positions more than women. Furthermore, an incongruity between women's gender identity and managerial roles was found (Powell and Butterfield, 2003). Therefore, if high masculinity is associated with high aspirations to top management positions; masculinity will continue within top management whether it is men or women in the boardroom. Schoon, Ross and Martin (2007) from their study of two British cohorts (1958 and 1970) found a persistent gender imbalance with regards to career aspirations and occupational attainment.

Recently, Gray and O'Brien (2007) researched the use of the career aspiration scale (CAS), developed originally by O'Brien in 1996 on the assessment of women's career choices. O'Brien (1996) proposed that a measure of career aspiration should include three factors; aspiring to leadership and promotions, the training and management of others and pursuing further education. Gray and O'Brien (2007) through five studies found support for the CAS as a valid and reliable measurement of women's career choices. Convergent validity was supported by correlations with measures of career decision self-efficacy, multiple role self-efficacy, and occupational self-efficacy, attitudes towards women's roles, instrumentality and relative importance of career versus family.

According to Kottke and Agars (2005) there are four underlying processes to women's advancement in the workplace; social cognitions, perceptions of justice, threat-rigidity and utility. 1. Social cognitions must be considered when integrating gender advancement initiatives especially gender stereotypes and social identity. 2. Perceptions of justice present an obstacle due to initiatives being viewed as targeted solely towards women's and ethnic minority needs. 3. Threat-rigidity refers to the threat the advancement of women may be perceived to pose to men in the organisation. As more women threaten the environment and the masculine identity within the organisation to which men are accustomed, as well as a reduction in their own promotional opportunities. 4. Utility for gender initiatives to succeed their utility must be demonstrated. By embracing these four processes, organisations will enable the advancement of all organisational members (Kottke and Agars, 2005).

Evidence that women are less likely to apply for promotion than men has been found in Australia (Probert 2005), the UK (Doherty and Manfredi 2006) and the USA (Harper et. al., 2001). Doherty and Manfredi (2006) explored the career routes and advancement procedures for both academic and support staff in four English Universities (two pre-1992 and two post-1992 Universities) and the extent to which these might constitute barriers to progression. Data collection involved twenty-six interviews with senior people involved in decision-making about promotions. They reported a general view across almost all the interviews that women were reluctant to put themselves forward for promotion and that they were likely to undervalue their achievements. By comparison, men were seen as more confident about their abilities and they were more likely to sell themselves confidently. Self-promotion violates female gender stereotypical behaviour yet is necessary for professional success (Moss-Racusin and Rudman, 2010). Women who self-promote suffer a backlash (Moss-Racusin and Rudman, 2010). Women have been found to be less likely to desire promotion into senior management than men (Litzky and Greenhaus, 2007).

In a cross-national comparative study of British and Portuguese attitudes towards promotion and women's employment, Crompton and Lyonette (2006) found a number of differences between the two countries and genders. For instance, they found that in Britain, men were more likely to think promotion was important than women. In Portugal, participants were more likely to express an interest in promotion, even if it gets in the way of family life. The authors found this surprising since the Portuguese participants, from the family related questions, tended to emphasise the importance of family life and were more 'family-orientated' than the British participants. The male and female British participants felt that working longer hours was required for promotion more than the male and female Portuguese participants. Furthermore, more women in Portugal worked full time compared to women in Britain; this is despite the limited child care facilities available in the country and the importance of 'the family' in the culture. However, women were found to work full time for economic reasons.

The body of research on the mechanisms that produce inequality at work tells us that inequalities such as gender, sexuality, race and class are deeply entrenched in workplace cultures (Britton and Logan, 2008). Looking at the intersections and

organisational context is important for making inequalities visible to help in the identification of strategies for change. It has been argued that organisations can be gendered (Acker, 1990). Organisations are shaped in specific ways and contribute to the construction of men and women (Alvesson and Due Billing, 2009). Gendered inequalities that are built into organisations could be considered as a possible explanation as to why men succeed despite a 'token' status (Britton and Logan, 2008). Acker moved gender from the realm of the individual to suggest that the organisational structure, the organisation or an occupation can have a gender. According to Acker, to say an organisation is gendered means:

'that advantages and disadvantages, exploitation and control, action and emotion, meaning and identity are patterned through and in terms of a distinction between male and female, masculinity and femininity' (See Britton and Logan, 2008, p107).

In a review of the literature surrounding gendered organisations, Britton and Logan (2008) put forward that there are three important areas on gendered organisations; inter-sectionality, organisational context and exploration of mechanisms for organisational change. Inter-sectionality is concerned with the ways different inequalities particularly gender, race, class and sexuality intersect within an organisation (Britton and Logan, 2008). For example, in a study of exotic dancers Trautner (2005) found the workplace to be both gendered and classed. With regards to race, research by Harvey (2005) and Kang (2003) both found the inter-sectionality of race, class and gender in their workplaces of study (see Britton and Logan, 2008 for an overview of these studies and more). Gendered context suggests that it is not just your occupation that can be gendered, raced, classed or sexualised but where you work also matters (Dellinger, 2004). According to Britton (2000): *'understanding what makes some context less oppressively gendered than others may be a crucial step in learning how to change organisations for the better (p114, in Britton and Logan, 2008).*

Many researchers have found that more formal bureaucratic organisations with transparent policies can create more diversity at all levels in an organisation (Reskin and McBrier, 2000; Royster, 2003; Wickham et. al., 2008). For example, Wickham,

Collins, Greco and Browne (2008) argue that the bureaucratic companies that have incorporated equal opportunities are more beneficial to women's career progression than individualised non-bureaucratic companies where career progression is reliant on individual managers. In their Irish study the authors found that in a non-bureaucratic software company, despite the flexibility of the culture, there were rigid life choices imposed on employees; either career or motherhood. They concluded that bureaucratic firms can be made more female and/or family friendly, whereas new non-bureaucratic firms can be hostile to women.

1.8.2 Career barriers

Women face a variety of barriers within the labour market in terms of career progression and advancement. A career barrier is viewed as an obstacle which prevents forward movement; an event or a condition that makes career progress difficult (Brown and Barbosa, 2001). Barriers have been defined as: *'event's or conditions, as much internal to the person, as those of his/her environment, that make professional progress difficult'* (Swanson and Woitke, 1997, p 446). Barriers can be overcome dependent on the type of barrier(s) and the individual's personality (Swanson and Woitke, 1997). Several barriers emerge repeatedly in the literature and numerous studies (i.e. Arfken, Bellar, and Helms, 2004; McCathy, 2004; Allen, 2005) suggest the following barriers to women's career progression; limited networking opportunities, limited access to mentors and role models, limited flexibility and child care provision, general discrimination, gender segregation of the workforce and higher values placed on masculine attributes. This unfair treatment impacts career advancement opportunities and also increases stress and reduces wellbeing at work (Perrewe and Nelson, 2004).

Today women still perceive the 'old boys' network' to be a significant barrier to career progression. Women tend to be excluded from these networks and consequently forgo the benefits and reciprocal behaviours (Vinnicombe, Singh, and Kumra, 2004). Developing women's networks can be an effective strategy for overcoming some obstacles to diversity because they challenge the invisible structures women face at work (McCarthy, 2004). Bain and Cummings (2000) suggest that programs to intensify networking and to provide mentoring and support

have been shown to compensate for the dissatisfaction women academics experience as they wait for their chance to move up in academia. Mentoring has been shown to have significant positive influences on the careers of mentees (Ragins and Scandua, 1994). A meta-analysis of the career benefits of mentoring point towards positive outcomes for protégés, relating to career outcomes, job satisfaction, promotion and salary level (Allen, Poteet, Lima, Eby and Lentz, 2004). However, consequences of the lack of women and ethnic minorities in senior positions may be due to a lack of mentors and role models for women within many organisations and employment sectors. It has been argued that women and ethnic minorities may have a special need for mentoring relationships but are less likely to have access to both external and internal mentors (Ragins, 1989).

Another barrier for many working women is the need for flexibility. Flexible working practices can facilitate the reconciliation between paid work and home life, whilst contributing to equality and diversity (Perrons, 1999). Flexible working is important in challenging a masculine culture of long hours and helps women to reconcile work and family commitments. However, flexible working initiatives which are brought in to enable women to progress can themselves become a barrier. For example, part-time working women may be marginalised and those who cannot work long hours can be seen as being less committed (Lane and Piercy, 2003). Flexible working has been viewed as gendered (Atkinson and Hall, 2009). UK research found that formal flexible working practises are gendered; viewed as being for women, with negative consequences on salary and career advancement. The research found that men use informal flexibility; with no impact on salary and career advancement (Atkinson and Hall, 2009). Hamel (2009) perceived organisational sanctioning of career barriers and the organisational commitment to the career advancement of women, influence responses to barriers. Promotion and advancement are the most common obligations employees perceive that their employers have to them (Rousseau, 1990; Robinson, 1996). Therefore, organisational barriers to advancement could be viewed as a breach of the psychological contract (Hamel, 2009). Having women in senior positions is argued to be associated with long-term company success and a competitive advantage (Cassell, 1997). However, the benefits of removing the barriers and promoting women to senior positions are often framed within the context of advancement for

business, rather than for being morally right and fair (Morrison, White and Van Velsor, 1992 in Goodman, Fields and Blum, 2003).

1.8.3 Women in leadership and senior roles

Figures from the Women and Equality Unit, 2005, suggest that women are less likely to work as managers or senior officials (11% of all women in employment, compared with 18% of all men in employment). Women comprise 30% of managers in England, 29% in Scotland and 33% in Wales. Managerial occupations remain strongly gender segregated. While women make up 73% of managers in health and social services, this figure falls to 6% in production.

Women's representation also varies by sector. In 2005, women formed 27% of the 71,000 members of the Chartered Management Institute. Differences in areas of management for women point to women in traditionally female posts. For example, data from the National Management Survey (2005)³⁸ revealed that in 2004, 69% of female managers were personnel managers, while 38% were financial managers. Evidence suggests that women also receive less pay than their male counterparts. Data from the National Management Salary Survey (2005) suggested that the average female manager earned £43,521, while the average male manager earned £48,668 a difference of 11.8%. Although women comprise 30% of managers in England, this is not reflected in the representation of women in the boardroom. As such women's involvement in more influential decision making roles is low. An analysis of female participation in companies quoted on the Financial Times Stock Exchange (FTSE) index 2005 by Singh and Vinnicombe (2005) suggests that although women have some representation in the boardroom they remain in the minority. According to more recent FTSE figures, in 2008 there were 131 female directorships on FTSE 100 boards, 11.7% of the total. Ten years ago there were 66. Despite the increase of female representation on the directorship of the FTSE 100; there are still 22 companies with all-male boards (Sealy, 2008).

³⁸ Accessed January 2009

http://www.managers.org.uk/content_1.aspx?id=10:294andid=10:290andid=10:9

Chugh and Sahgal (2007) reviewed literature surrounding women in management from 1985-2006. According to the literature review, the glass ceiling and stereotyping are the two main factors that contribute to the lack of women in leadership or management positions. Chugh and Sahgal also found some cultural differences, in that, studies in South Asia have more women leaders and are significantly represented in the workforce. Jobs and organisations have an impact on individuals, and the authors conclude that the: '*male dominance in organisations and gendering of jobs does not allow [female] leaders to emerge*' (p360).

1.8.3.1 Characteristics of a good leader/manager

According to some authors, male characteristics are the characteristics most desired in managers (Kawakami, et. al., 2000; Schein and Muller, 1992; Schein, Mueller and Jacobson 1989; Willemsen, 2002). Feminine traits include warmth, kindness, selflessness and sympathy (Schein, 1973). Masculine traits include aggressive, forceful, rational, competitive, decisive, strong, self-confident and independence (Schein, 1973). Leadership is viewed as masculine and therefore more congruent with masculine gender role than feminine gender role (Eagly and Karau, 2002; Powell, 1999). This perception leads to more authority being placed on men and men being viewed as more influential than women (Carli, 2001). It also effects how women perceive themselves as potential leaders; as they may feel less confident and less comfortable in the position than men do (van Engen et. al., 2001). Eagly et. al. (1995) suggest that women need to display more masculine characteristics to be successful managers and leaders. Thus, the research suggests that women are unequally valued as managers due to the perceived nature of management being a male domain and masculine characteristics and attributes most valued. This has been found to be the case from studies conducted in a number of countries, such as the USA, the UK and Germany (Schein and Mueller, 1992), Japan and China (Schein et. al., 1996) and New Zealand (Sauers et. al., 2002).

Nieva and Gutek (1981) suggest that behaviour which is congruent with ones gender role is viewed more favourably than incongruent gender role behaviour. A view supported by Eagly et. al. (1992), who, from a meta-analytic review found that female leaders who displayed a masculine style were valued less positively than male

leaders, this view was also supported more recently by Willemsen (2002). Willemsen (2002) found that when students were asked to attribute gendered characteristics to a successful manager, they were more likely to favour male characteristics than female. However, the study did find that the gender-neutral attributes were perceived as being most associated with a successful manager (Willemsen 2002).

Garcia-Retamero and Lopez-Zafra (2006) following Eagly and Karau's (2002) role congruity theory, evaluated the extent to which prejudice against female leaders stems from incongruity between expectations about women and about leaders, as well as the difference between female leaders in occupations congruent and incongruent with their gender. In a study of over 700 people in Spain, the authors found a number of differences between how women and men were perceived and how they were perceived depending on whether they worked in an auto manufacturing industry or a clothing manufacturing industry. Men were favoured as leaders regardless of the industry they worked in. Females were perceived more feminine when they worked in an industry that was congruent with their gender role and more masculine when they worked in an incongruent industry. Furthermore, female leaders were considered less effective than men in environments that were perceived masculine and equally as effective in environments perceived as feminine. Results suggest that stereotyping leads to the concept of leadership as masculine and this can lead to a bias against female candidate's promotion to a leadership post. This is more so when the female works in an industry incongruent with her gender role. Interestingly, the study found that female and older participants showed more prejudice than men and younger participants.

It has been suggested that women in male dominated organisations are more likely to encounter difficulties in achieving social interaction among male peers; as men may find it difficult to relate to female superiors (Davidson and Cooper, 1992). Whereas women prefer a female manager (Borg, 2001, see Cortis and Cassor, 2005) except when female managers adopt a masculine style (Davidson and Cooper, 1992). Females have a more favourable attitude towards women as managers than their male counterparts (Cortis and Cassor, 2005). This could suggest that men still hold the stereotype that management is for men. Furthermore, female managers tend to be younger than their male counterparts and are more likely to remain single (Cortis and

Cassor, 2005). This could be due to female managers wishing to limit the number of social roles they have and thus decreasing role conflict (Keene and Reynolds, 2002, see Cortis and Cassor, 2005). Other research suggests that on the whole stereotypes about women are changing (Duehr and Bono, 2006). However, Duehr and Bono's 2006 study did find that male student's stereotypes had not changed much with regards to the characteristics of a successful manager and that men in general view women as possessing fewer of the characteristics of a successful manager. The characteristics of a successful manager in this recent study were viewed as being agentic, communal, task-orientated, relationship-orientated and transformational. This 'fitting into the male norm' supports Schein et. al.'s (1989) earlier findings. In addition, Duehr and Bono found that those who had positive past experiences with female managers rated women higher on management characteristics. This perhaps highlights the importance of female mentors and role models.

Diekmann and Eagly (2000) suggest that stereotypes can be dynamic. This is especially true for female characteristics, which they argue are becoming more masculine due to women's increased participation in employment, specifically employment in male dominated occupations. They suggest that stereotypes can be a dynamic force and thus act as a function of social change, in that, women's characteristics will continue to become more like men's, which in turn will enable more women to access male dominated occupations. However, this view would seem to suggest that women are becoming more masculine to fit in with, rather than bringing their femininity into the workplace and challenging the masculine norm. This has also been viewed the case for women working in male dominated occupations such as engineering (Powell, Bagihole and Dainty, 2009).

Oakley (2000) puts forward that one reason women are scarce as CEO's is due to a double-bind in leadership positions. Oakley argues that this double-bind for women in leadership positions is that they: *'must be tough and authoritative (like men) to be taken seriously, but they will be perceived as 'bitches' if they act too aggressively'* (p324). Whereas, Jamison (1995), suggests that a double-bind for women leaders is the femininity/competence bind, where feminine is associated with incompetence and competent is associated with masculine traits and thus women leaders are viewed as unfeminine (in Oakley, 2000). The junior managers in a study of UK bank managers

saw two types of people succeeding. One type is the person with good interpersonal skills, who could win respect and influence people. The other type is self-confident, aggressive, single minded and selfish (Liff and Ward, 2001). When asked what they would have to change about themselves in order to succeed, junior managers thought they would need to become more visible and network more. Senior managers in the study viewed the important characteristics of managers as ability, analytical and flexible thinking, well developed leadership and communication skills, the need for drive, determination and self confidence. Women managers were also viewed as needing to be tough and some of the males interviewed viewed women in senior jobs as having: *'lost their femininity'* (Liff and Ward, 2001, p25).

Cann and Siegfried (1990) suggest that effective leadership requires: *'consideration and structuring behaviours'* (p413). Structuring is viewed as being a more masculine behaviour, whereas, consideration is seen as more feminine. Therefore, the authors suggest a more androgynous view of leadership is more accurate, with both male and female behaviours equally important in leadership roles. More recently, Omar and Davidson (2001) suggest leaders need to be: *'relational-orientated, nurturing and caring which are more typically associated with women than men'* (p35). Omar and Davidson term this new style of leadership as the *'feminisation of management'* (p35). This view is supported by Jogula and Wood (2006), who argue that female managers display more transformational leadership style than their male counterparts and this is equated to effective leadership. Bajo and Dickson's (2002) cross-cultural study of organisational culture found that women were more likely to excel in organisations that emphasise gender equity, and valued both feminine and masculine traits. Despite some cultural variations; findings from three countries; Australia, Germany and India, revealed a shared view that female leaders possess a higher person orientation than men. (Sczesny et. al., 2004).

Although there is a lot of research to suggest that the stereotypically masculine characteristics and behaviours are the most desired in management and leadership roles, it would appear from the more recent studies highlighted that the view of what makes a successful/effective manager is changing. This change in the characteristics of manager's includes more feminine characteristics, with some researchers

suggesting individuals with more androgynous characteristics make the best managers/leaders.

Summary

Women face a variety of barriers within the labour market in terms of career progression and advancement. These barriers include a lack of access to networks and mentors, a lack of flexible working due to the organisational culture they work in. Women do not generally reach higher levels of management across workforce sectors, and those that do are often segregated into certain industries, such as, healthcare (Arfken, et. al., 2004). In addition, having women in senior positions is often framed within the context of advancement for business, rather than being morally right and fair (Morrison, White and Van Velsor, 1992 in Goodman, Fields and Blum, 2003). Wilson-Kovacs, Ryan and Haslam (2006) examined the concept of the glass cliff to explain what happens to women as they advance in senior positions. The glass cliff is a metaphor used to refer to mainly women in leadership positions, which tend to be risky and precarious. The study looked at women in the UK private IT sector and found the concept of the glass cliff useful when looking at the retention and lack of women in executive positions within the sector. There is also evidence from recent research of a glass cliff in politics (Ryan, Haslam and Kulich, 2010).

Other ways in which women are marginalised may be due to organisational structures or cultures. Research has suggested that male characteristics are more desirable than female characteristics (Fondas, 1997; Willemsen, 2002) and women managers who behave in a masculine way are perceived negatively (Fiske and Stevens, 1993). However, research has found that gender-neutral attributes are perceived as being most associated with a successful manager (Willemsen 2002). Research has suggested that women are more likely to excel in organisations that emphasise gender equity and value both feminine and masculine characteristics in their workers (Bajo and Dickson, 2002). There have also been differences in the pay of women compared to their male counterparts. For example, Wass and McNabb (2006) in a study of UK solicitors found that female solicitors earn 58% of the earnings received by male solicitors. In addition, they also found women had fewer prospects for promotion, especially due to the long hour's culture within the profession, more so with non-

chargeable work. All of the barriers highlighted make it more difficult for women to progress within the workplace, especially women working in male dominated occupations and environments viewed as incongruent to their gender.

1.9 Life Issues

This section will look at life issues which can impact women in terms of career and career development. Issues such as work life balance, a long hour's culture and parenthood are discussed.

1.9.1 Work life balance

Work identity for both men and women has been shown as a central part to a person's identity (Simpson, 2004). Work is becoming an increasingly important element in women's lives (Tinklin et. al., 2005). However, it has been suggested that career development is structured around men (Tracey and Nicholl, 2007). Combining work with other roles especially motherhood, has been viewed as a major disadvantage to women in the workplace. For example, according to Rapoport et. al. (2002):

The definition of commitment remains rooted in a traditional concept of the ideal worker as someone for whom work is primary, time to spend at work is unlimited, and the demands of the family, community and personal life are secondary' (Rapoport et. al., 2002, p 29, see Shapiro et. al., 2008).

Newstrom and Davis (1994) (see Cortis and Cassar, 2005) define job involvement as not only the degree to which employees engross themselves in their job, but also involves the extent to which employees view work as being a central part of their lives. Therefore, women who are both career and family orientated are at a disadvantage. Family demands may interfere with women's careers, leading them to perhaps, refuse overtime, rearrange their working day, refuse extra work, all of which can be viewed as being less committed or job involved (Keene and Reynolds, 2002 see Cortis and Cassar, 2005). Life circumstances often impact and lead to adaption of career goals. Women have been found to have more work-family conflict than men

(Innstrand et. al., 2009). Women's extra domestic responsibilities can create work overload, effecting women's experience of work and possibly reducing their career promotional opportunities (Keene and Reynolds, 2002 see Cortis and Cassar, 2005). For instance, research by Strahley and Longo (2006) of ninety female surgeons in the USA found that, motherhood and family concerns were detrimental to career progression. Recent figures found 61% of medical students in the UK were female, yet only 10% of female house officers as opposed to a third of men plan a surgical career (Morris, 2005). In another UK study, Lambert et. al. (2003) found that quality of life issues played a significant part in rejecting certain specialties, leading to high numbers rejecting surgical specialties. A higher percentage of women than men gave reasons related to quality of life (54% and 39% respectively) for rejecting a surgical speciality. Additionally, culture and attitude were also cited as reasons for rejection (Lambert et. al., 2003). In a cross-national study, Crompton and Le Feuvre (2006) compared British and French GP's and found that gender segregation is due to national variations in professional and domestic architectures, not necessarily gender. They found that when male doctors gave priority to family compatibility when making their occupational choices, they choose options similar to family orientated female doctors. So it would seem from this study that the career consequences of caring responsibility are the same for both sexes.

According to identity theory, identities are arranged in a hierarchy, with the most salient taking precedence across multiple situations (Stryker and Serpe, 1994). However, it has been suggested that identity is a balance rather than a hierarchy (Bird and Schnurman-Crook, 2005). Bird and Schnurman-Crook (2005) found that the participants in their study identified highly to both work and family and attempted to match behaviour to both identity standards. They found that both genders employed coping strategies when family or work stressors threatened to disrupt these salient identities. Wharton and Blair-Loy (2006), studying the effect of work-family conflict, suggest from a cross-cultural study of professionals in the USA, England and Hong Kong, that the meaning of family varies nationally. They found that Hong Kong participants had more worry regarding work-family conflict compared to the USA and UK participants. This was due to the strong extended family obligations in Hong Kong culture. However, it was evident that women in all three countries had higher levels of work-family conflict than men. Cultural differences are important to

consider when looking at work life balance issues as highlighted by Wharton and Blair-Loy's study. According to Van Der Boon (2003), balancing work and family is not an obstacle for women from countries where childcare and household help are both inexpensive and easy to arrange. Cultural differences in appropriate gender behaviour should also be considered.

Reynolds and Aletraris (2007) found from an Australian sample, that work-to-family conflict often tends to be associated with the desire for fewer hours of work and that family-to-work conflict is only weakly associated with the desire for fewer hours. They suggest that people have different coping strategies dependent on their gender and family situation. One strategy people may employ in order to reduce work-family conflict is outsourcing some of the domestic labour and childcare. From analysis of 795 Dutch couples, De Ruijter and Van der Lippe (2007) found that couples who work long hours will outsource more of the female tasks. They also found that when women work from home this reduces the amount of formal childcare; whereas the opposite occurs when it is the man who works from home where more formal childcare is sought. Similar findings have been found amongst couples with children in the USA (Noonan, Estes and Glass, 2007). De Ruijter and Van der Lippe (2007) found that the more flexible a couples work, the less they outsourced domestic tasks. Suggesting that employers can help their employees achieve a better work life balance by offering flexible working hours and the opportunity to work from home.

Most research in the area of work life balance and work-family conflict is conducted on professional women. However, Ciabattari (2007) examined work-family conflict among low-income, single mothers. Ciabattari found that, work-family conflict keeps these women out of the labour market and as the conflict makes it difficult for the women to stay in stable employment. This suggests that all women are restricted by their domestic and childcare responsibilities, but depending on their occupation, the effect can be somewhat different. Another group often overlooked in discussions of work life balance are women with no children. Hamilton et. al. (2006) in an American study of female health care professionals looked at unmarried women without children and their experience of work life conflict. They found that these women had a similar level of work life conflict to other groups of women. People have a variety of roles that constitute non-work and therefore may cause them conflict with work. Skitka and Bravo (2005) looked at fairness in organisations using

an accessible identity model. They suggest that when looking at family friendly policies the childless are disadvantaged. Similarly, Burkett (2000) argues that family friendly policies are unfair because some employees are getting more benefits for the same work as others. Burkett goes on to argue that non-parents are paid less, in effect, even though they may be asked to work more to pick up the work left behind by parents absent to care for a child.

1.9.2 Long hours culture

Associated with work life balance is the issue of long hours, which appears to be especially prominent in male dominated occupations, such as ICT (WWW-ICT, 2004). For example, Griffiths, Moore and Richardson (2007) through an online survey of over 450 women in ICT occupations across England, found a strong long hours and presenteeism culture within the ICT industry. It has been suggested that the number of hours a person works and a culture of presenteeism show commitment to your job and your organisation (Simpson, 1998; Newell and Dopson, 1996). Simpson (1998) found from a mixed methods sample of both male and female managers, that long hours was the top pressure experienced by both men and women; 66.9% and 61.5% respectively. For the female managers long hours were seen to result from a combination of factors; work pressures, the politics and culture of the organisation, and competitive behaviour by men engaging in 'competitive presenteeism'. In addition, presenteeism was seen as a form of 'male resistance' to women in the workplace. Simpson stated that: *'men have been found to be culturally active in creating an environment where women do not flourish and in this way staying late in the office can be an effective weapon'* (p45).

Through an examination of professional computing employment in Australia, Diamond and Whitehouse (2007) found a stronger long hour's culture in the private compared to the public sector. Furthermore, part-time work was a rarity in both sectors. They also found that men and women respond differently to workplace constraints. For example, females with children were more likely to move into areas where hours could be maintained and be made more predictable. Consistent with other findings which suggest that mothers more than fathers are more likely to: *'adjust their jobs and personal lives to accommodate family commitments'* (Russell and

Bowman 2000, p16 in Diamond and Whitehouse, 2007). Presenteeism is also often cited as a key factor in terms of improved career chances (Newell and Dopson, 1996). In a study of organisational restructuring at British Telecom, Newell and Dopson (1996) found that the number of hours worked was seen as an important measure of success despite a strong feeling that these hours were not really necessary. Being seen at one's desk for long periods of time was perceived as necessary to advance one's career by demonstrating a heightened commitment to the organisation. Dreher (2003) in an analysis of sex ratios and work life balance programs in seventy-two USA corporations confirms that more and more hours of work are now required to be successful in a career and this can disadvantage women.

Parental status is another important consideration when discussing women's careers and career development. According to Simpson (1998) women with children were generally less likely than women without children to occupy senior positions. Burke and McKeen (1996) in a Canadian study of employment gaps on the satisfactions and careers of managerial and professional women highlight the potential pit falls of taking time out of work. Burke and McKeen found that University educated women in managerial and professional jobs who had gaps or interruptions in their work and career histories, were less satisfied with their career and future career prospects, less involved in their jobs and were earning less income than managerial and professional women who had no career or work interruptions. These differences occurred, despite both groups of women having similar levels of education and credentials, and seniority within their organisations.

Autonomy has also been viewed as an important factor when considering work life balance issues. For example, Hughes and Parkes (2007) found that individuals who had control over their working hours suffered less work-family conflict despite long hours. The authors suggest that employers should enable their employees some flexibility and control over their work hours to reduce the negative effect of long hours. However, studies of professional workers have found that part-time employment can place women at a disadvantage within the workplace in regards to promotional opportunities and advancement. Research has found that women often return to work after having children to part-time, traditional female jobs (Mattei and Jennings, 2008). In the European Union, the percentage of women working part-time

in 2007 was four times higher than for men (European's Women's Lobby, 2009). Career researchers tend to focus on professional women and/or women in management positions when looking at the effects of working part-time. However, the vast majority of employed women are in lower level service jobs (Webber and Williams, 2008). In response, Webber and Williams (2008) through qualitative analysis looked at the effects of part-time working for mothers across the occupational spectrum. The authors found that the meaning of part-time work and the experiences were different for the two groups of women. The study found that women face different disadvantages from their part-time employment, depending on their position within the employment hierarchy. What they found that was similar, was that all women in the study felt it was their choice and so absolves organisations of blame for disadvantages encountered by part-time workers.

Conflicting roles can lead to role strain (Simpson, 2005) which can increase psychological distress and decrease role quality (Voydanoff, 2005). Perrone et. al. (2009) suggest one strategy for reducing such role strain, is for employers to encourage flexible working practices. Greater flexibility at work has also been linked with greater satisfaction, both at work and within the family (Clark, 2001). Mothers confront a labour market divide of 'good jobs'; which confer many privileges but do not accommodate motherhood and 'bad jobs'; which accommodate mothering responsibilities but without adequate or just compensation (Clark, 2001). Suggesting, there is a great deal of complexity in women's part-time work. Through a study of women workers at IBM in America, Hill et. al. (2004) found support for the notion of a new-concept part-time work, to assist women in professional careers to integrate their families. This new-concept part-time work, they argue, allows women a pro rata salary and professional opportunities. MacDermid et. al. (2001) studied part-time professional women in order to gain an understanding of their career development. They found specific challenges to part-time workers such as a need for stimulating assignments, a lack of networking opportunities and information exchange were all predominant features. Furthermore, they found that part-time workers comfortable with the protean career model of working tended to be more successful in their careers, with success being more determined by internal rather than external measures. Therefore, it would appear that a protean career is not favoured by organisations. MacDermid et. al. (2001) view protean careers as: *'internally-oriented,*

flexible, mobile and may involve both horizontal and vertical growth in the pursuit of goals defined by individual workers' (p306).

1.9.3 Parenthood

'Only 40% of high-powered professional women get back to full-time work after taking leave, usually at a significant pay reduction' (Mattei and Jennings, 2008, p27).

The above quote by Mattei and Jennings highlights the effect taking leave (usually for motherhood) has on women's careers. In the main women remain responsible for the majority of domestic matters and husbands are viewed as 'pitching in' or 'helping out' (Bird and Schnurman-Crook, 2005). A major reason for women's lack of progress in the workplace has been due to their continuing responsibility for caring and domestic work (Blossfeld and Drobnic, 2001; Wajcman and Martin, 2002). Married women devote approximately twice as much time to housework than married men (Bianchi et. al., 2002 in Cunningham, 2007). Askari et. al. (2010) found women expect inequality in their relationships; they expect to do more childcare and household chores. Cunningham (2007) found that husbands of women with more employment experience throughout marriage perform more housework than husbands of women with shorter employment histories. It has been suggested (Schultheiss, 2009) that mothering needs to be conceptualised as work in order for it to be valued. According to Schultheiss (2009), women who work as full time mothers are neglected by career development theories and research.

Wallace and Young (2008) looked at how the presence of children affected the productivity of female lawyers in Canada. The study found that women with school aged children were less productive than non-mothers, whereas fathers with school aged children were more productive than non-fathers. In addition, the mothers in the study did not seem to benefit from working in a family friendly firm. However, Wallace and Young (2008) also found that women with teenage children work longer hours than women without children. Correll and Benard (2005) in an American study of undergraduate students found that mothers were rated less competent, less committed, and less suitable for hire, promotion, management training and deserved

lower salaries than non-mothers and men. Suggesting there is a 'motherhood penalty'. Men on the other hand were not penalized for being a parent but tended to benefit from having children. Men with children were viewed as more committed to work than childless men and offered higher starting salaries. However, childless women were viewed as more committed and competent than childless men. Interestingly, this difference did not differ significantly for male and female participants. There was also no difference between African American and white women; both groups of women experienced the motherhood penalty. The authors suggest that: *'normative conceptions of the 'ideal worker' and 'good mother' create cultural tension between the enactment of the motherhood role and the enactment of the committed worker role'* (p11).

Organisations in many different sectors are still reluctant to employ working mothers (Gatrell, 2005). Mothers are perceived less motivated due to their family obligations (Voydanoff, 2004). As a consequence they receive fewer promotion opportunities and less pay (Keene and Reynolds, 2005). Increasingly, dual earner couples are using more outsourcing services such as cleaning services, day care and handymen (de Ruijter and van de Lippe, 2007). Regardless of whether companies offer family friendly benefits, the use of these benefits depends upon whether they are embedded within, and supported by the organisational culture of the company (Blair-Loy and Wharton, 2002; Friedman and Greenhaus, 2000; Wallace and Young, 2006). Other care commitments should also not be ignored by researchers, for instance, eldercare has been found as being even more sex-based than childcare with women doing the majority (Bennetts, 2007).

1.9.4 Women without children

Historically and traditionally the roles of women and feminine identity have been constructed around motherhood (Gillespie, 2003; Ramsay and Letherby 2006). Letherby (2002b) explored the experiences of women who were infertile and women who were voluntarily childless and argues that: *'non-mothers are defined as problematic, unnatural and abnormal'* (p285). Women who do not have children either voluntarily or involuntarily are viewed as 'other' to the feminine ideal (Letherby, 2002a and b, Gillespie, 2003). Research has also found that voluntarily

childless women to be viewed negatively and attributed negative characteristics such as immature, selfish, deviant and unfeminine (Rowlands and Lee, 2006). Similarly, Callen (1985) found that voluntarily childless couples were seen by Australian University students as more selfish, materialistic, individualistic and career oriented than parents (in Rowlands and Lee, 2006). Research has found childless women are less traditional in sex role orientation than those women who are parents or delaying parenting (Bram, 1984). Somers (1993) found that childfree adults perceive that they are viewed negatively by others and that this was most prevalent for women than for men.

Rowlands and Lees's 2006 study looked at the attitudes towards a lesbian planning to become a mother, a heterosexual woman planning to become a mother, a voluntarily childless lesbian and a voluntarily childless heterosexual woman of undergraduate Australian students. Amongst their findings, they found that in general, women choosing to have children were viewed more positively than women not choosing to have children and the heterosexual woman was viewed more positively than the lesbian. Despite these findings, they also found that the heterosexual woman not wanting children was described as happier as and more mature than the heterosexual woman wanting children. They found that attitudes towards lesbian parenting were becoming more positive. The authors suggest that attitudes towards an alternative femininity, aside from motherhood, are becoming more acceptable. However, it must be noted that the sample for the study was undergraduate students and so it is difficult to generalize the results to the general population.

Non-motherhood is just as complex and varied as motherhood (Letherby, 2002b). Childless women are not a homogeneous group. According to Ireland (1993), who interviewed a hundred childless women, there are three distinguished pathways in which childless women establish a positive sense of their female identity. 1) The traditional women are those suffering from infertility or health problems. 2) The transitional women are childless by delay and 3) the transformative women who consciously choose not to become mothers. More recently, Kemkes-Grottenthaler (2003) suggests that there are four distinct subgroups. Those who have actively decided to forgo children, those who are presently postponing having children, those who are yet undecided and those who are past their reproductive years.

Morrell (2000) interviewed thirty-four intentionally childless married women in America. Morrell found that childless women are defined by the 'loss' or 'absence' of a child and therefore they redefine themselves. This redefinition according to Morrell is a reversal. Morrell suggests that the emptiness of being childless is re-understood and allows possibilities of growth, expansion and exploration. Ireland (1993) suggests childless women redefine absence as a creative space and in doing so women unlink motherhood from a viable female identity. Similarly, Gillespie (2003) argues that changes in reproductive technologies means women in UK, Europe and USA are having fewer children and having them later in their lives. Childless women have been viewed as creating new discourses that can subvert and transform constructions of femininity (Gillespie, 2000). Mcallister and Clarke (1998) argue that choice is an ongoing process taking place over time and dependent on circumstance and experiences (in Gillespie, 2000). Wager (2000) puts forward that: *'I did not choose childlessness but I choose other things that gave meaning to my life'* (p393). Both options; motherhood and non-motherhood, should be supported (Morrell, 2000).

1.9.5 Childless women in senior positions

Many women and especially women in senior roles are childless or childfree (Yogev and Vierra, 1983; Gillespie, 2003; Wood and Newton, 2006a and b). From their 1983 research, Yogev and Vierra put forward that one reason for younger professional women's reluctance to have children was that they cannot combine motherhood with a career. In a recent German study of academics, Kemkes-Grottenthaler (2003) found that job and career preferences were the driving force for women to remain childless. In a UK study, Liff and Ward (2001) found similar results. Looking at male and female junior managers perceptions of senior roles, the authors found that motherhood was viewed as the end of a female manager's career. In the study gender differences were evident. Male senior managers found conflict between work and family, in that, they could not see more of their children; whereas for women it was exhaustion in trying to maintain the two roles.

Ramsay and Letherby (2006) interviewed academic non-mothers and found that not all non-mothers have careers. Supporting Letherby (2002) they argue that just as

motherhood is a complex identity, so is non-motherhood and it is not appropriate to stereotype women without children as unsupportive of colleagues who parent and that they are necessarily career driven. Ramsay and Letherby suggest that women are defined in the workplace by motherhood or their potential of possibly becoming mothers. At times women without children may be expected to give more to work, since they are viewed as having no outside work responsibilities. Mothers and others should not be seen as binary opposites (Ramsay and Letherby, 2006). Ramsay and Letherby (2006) argue that non-mothers face the expectation of being perceived by students and other staff members as 'natural' carers because they are women and academic non-mothers are also expected to put in the time and energy that mothers cannot. Ramsay and Letherby's 2006 findings support Letherby and Cotterill (2001), who argue that gender segregation within academia exists, not only in the subjects women tend to choose, but also gender segregation is shown through the gendered expectations that women are expected to display so-called natural, womanly qualities such as kindness and support (in Ramsay and Letherby, 2006).

Wood and Newton (2006a) in a recent Australian study of women managers suggest that childlessness amongst women in management and professions in general is a failure of equal opportunities policies to overcome gender inequities in the home and the long work hour's culture. They argue that the work life balance is an 'elusive ideal' (p338) and the long hour's culture does not support appropriate parenting. In an earlier study looking at the advancement of men and women in different family structures, Tharenou (1999) found that advancement in organisations is lower for childless single men and women and single fathers, than for other family structures. The Australian study found that traditional fathers received the most advancement out of all the different structures. The lack of advancement for single people could perhaps be due to a perceived lack of financial need, not conforming to social expectations or due to a lack of spousal support.

Summary

Work life balance issues have become proliferate in the literature on women's careers and the career development of women. Women are still, in the main, responsible for the majority of domestic labour and childcare (Raskin, 2006; Bird and Schnurman-

Cook, 2005; Wajcman and Martin, 2002; Blossfeld and Drobic, 2001; Simpson 1998). Even when they work from home, women combine work with childcare (Noonan et. al., 2007; De Ruijter and Van der Lippe, 2007). A culture of long hours' is associated with many male dominated sectors, such as ICT and this has a dramatic impact on women's career progression and work life balance (Valenduc et. al., 2004; Perrons, 2003; Gill, 2001).

Historically and traditionally the roles of women and feminine identity have been constructed around motherhood (Gillespie, 2003; Ramsay and Letherby, 2006). Women who do not have children either voluntarily or involuntarily are viewed as other (Letherby, 2002a and b; Gillespie, 2003). Many women and especially women in senior roles are childless or childfree, often due to the difficulties of combining motherhood with a career (Yogev and Vierra, 1983; Liff and Ward, 2001; Gillespie, 2003; Wood and Newton, 2006a and b).

1.10 Culture and generation differences

This next section would like to look at the issues of cultural differences and generational factors both of which might have an impact on women's careers. The section would like to discuss the literature around cultural differences, in particular the work of Hofstede (1984, 2001). Cultural issues are deemed important since women's experiences of work can vary due to cultural factors and structures. Generational differences are briefly discussed as work in this area is becoming more prevalent in workplace studies and occupational research.

1.10.1 Cultural Issues

Considering cultural variations is important when looking at the careers of women. A number of cultural differences have already been brought to light through the literature review. For instance, with regards to; work life balance issues (Wharton and Blair-Loy, 2006), attitudes towards promotion (Crompton and Lyonette, 2006), and female managers (Chugh and Sahgal, 2007). There have also been cultural differences with regards to a number of measures used within the study; especially the BSRI (Katsuranda and Sugihara, 1999; Zhang, Norvilitis and Jin, 2001; Ozkan and Lajunen, 2005; Peng, 2006). According to social role theory (Eagly, 1995; Eagly

and Karau, 2002) cultures convey shared expectations of what is appropriate behaviour for males and females. Gender differences have been found to vary across cultures, including personality traits (Costa et. al., 2001) and value priorities (Schwartz and Rubel, 2005) with some surprising results. For example, a surprising finding by Costa et. al. (2001) was that gender differences were more pronounced in western countries, which tend to have more equalitarian gender role ideologies than non-western countries. More in line with expectations were the findings from Schwartz and Rubel (2005). In a cross-cultural study of gender differences in value priorities, Schwartz and Rubel (2005) found that in general, men place more importance on the values; power, stimulation, hedonism, achievement and self-direction than women; whereas women place more importance on benevolence and universalism. The sexes were found not to differ on tradition or conformity values. In addition they found the size of the differences in value priorities varied depending on the value.

One of the most highly regarded cross-cultural works is that of Hofstede's. Despite this high regard, Hofstede's research has been criticised for a number of reasons. For instance, the methodology used (Tayeb, 1996, see Gooderham and Nordhaug, 2002); since the research is entirely based on an attitude-survey questionnaire, which Tayeb contends is the least appropriate way of studying culture. However, Gooderham and Nordhaug, (2002) argue that for comparative purposes involving many countries Hofstede's survey-based approach is highly efficient. Hofstede's work has also been criticised for being outdated. Outdated due to world globalisation and because of the study sample representative, since the sample was predominantly one firm of middle class employees (Robinson, 1983 see Gooderham and Nordhaug, 2002). However, despite these criticisms, the research is one of the most validated and reliable cultural works (Gooderham and Nordhaug, 2002). In 2001, Hofstede published the second edition of his culture's consequences book, which considered cross-national differences. Hofstede developed a masculinity index (MAS) and gave each of the fifty-three countries involved in his research a MAS score; with high-MAS countries being more masculine and low-MAS being more feminine. The majority of Hofstede's work is focused on participants working at IBM in various countries. The masculinity index has been validated against other cross-national data sets, with other

populations and against other large cross-national studies of values; including Schwartz's Value Surveys and the European and World Values Surveys.

Within IBM the participants were in one of three occupations; unskilled personnel, head office clerks and branch office systems engineer. Differences with regards to MAS were also found to be dependent on occupation as well as country. For example, the average female systems engineer scored more masculine than the average male clerk or unskilled worker. Perhaps adding further evidence to the research which suggests women dis-identify with their femininity in male dominated occupations (Powell et. al., 2009). With regards to national differences; in France, Britain and Germany some female systems engineers scored almost as much masculine as their male colleagues. Swedish female systems engineers and unskilled workers scored more masculine than their male colleagues. The Japanese unskilled female workers and the German female engineers scored the most MAS out of the female sample. There were also age related factors associated, in that, masculinity decreased by age and the gap between the genders disappeared with age. According to Hofstede nationality and gender are both forms of cultures since:

'like nationality, gender is an involuntary characteristic. Because of this, the effects of both nationality and gender on our mental programming are largely unconscious' (p286).

Hofstede found that the importance people attach to 'feminine' and 'masculine' work goals varied across countries as well as across occupations. The countries with higher-MAS values of men and women in the same job differed more than in lower-MAS countries. The country with the highest MAS was Japan. Other high-MAS countries included; Austria, Switzerland, Germany, Mexico, Venezuela, Italy, USA, UK, South Africa, Canada, Australia and New Zealand. Asian countries (except Japan) were in the middle of the MAS scale and feminine countries included; France, Spain, Portugal, Chile, with the most feminine countries being Finland, Denmark, Norway, Sweden and the Netherlands. Hofstede even found that the women in Norway and Sweden scored more masculine than did the men in the same occupations, highlighting the feminine nature.

Hofstede discusses masculinity with regards to the family, educational system and schools, gender roles, consumer behaviour, in the workplace, political priorities, political mores, sexual behaviour, religion, demographic and economic factors as well as historical factors. According to Hofstede, jobs are stereotyped as being either 'masculine' or 'feminine' but these stereotypes can vary from one country to another or from one organisation to another. Within masculine countries more important factors related to work were pay, security and job content whereas, feminine countries stressed relationships and physical conditions. For Hofstede the work in masculine and feminine countries differed in that:

'between the two poles living in order to work and working in order to live, masculine cultures are closer to the first and feminine cultures closer to the second' (Hofstede, 2001, p312).

Countries with lower-MAS recognised more characteristics of women in managers, they promoted more women into management positions, and there was a smaller wage gap between the genders. They also had lower job stress, a preference for working in smaller companies and they have a preference to work fewer hours. With regards to career aspirations, within lower-MAS countries career aspirations are viewed as optional to both genders, compared to career aspirations being expected by men in masculine cultures and only optional by women. In addition, participants in the masculine countries were more ambitious and more prepared to uproot their families. MAS level was also found to be related to job and life satisfaction. In higher MAS countries the job took more of a central position in the participants total life space than in lower-MAS countries; where life issues played a more prominent role. Furthermore, Hofstede puts forward that the increasing number of women within the workplace, will enable feminine values to maintain within the workplace, which in turn will shift the whole of society towards being more feminine and holding more feminine values.

1.10.2 Generational differences

In recent years generational differences have been a pertinent focus of work related performance. A generation is a group of people or cohort that share birth years and

experiences as they move through life. Individuals within a generation are influenced in their developmental years by a variety of critical factors. Critical factors which include; social, economic, and political events significant to that generation. This sharing of similar experiences leads people within a generation to develop similar values, opinions, and life experiences which distinguishes them from other generations (Kupperschmidt, 2000; Smola and Sutton, 2002; Gursoy, Maier and Chi, 2008; D'Amato and Herfeldt, 2008).

Although there is some slight ambiguity concerning the date ranges of the generational cohorts, it is generally the case that, those born between 1943 and 1964 are referred to as baby boomers (boomers); those born between 1965 and 1981 as Generation X (Xers) and those born after 1982 as Generation Y (Yers). The current workforce has at least three, possibly four generations in it, which can cause conflict (Gelston, 2008). According to Gelston (2008) workforce relations between the generations is at a low, with major issues centring round the use of technology and work ethics.

Boomers (1943 – 1964) it is claimed, value job security, a stable working environment, are loyal to an organisation, are idealistic, optimistic and driven (Kupperschmidt, 2000). Boomers also tend to be associated with the adage, 'live to work' (Sayers, 2007). Generation Xers (1965 – 1981) on the other hand tend to be viewed as cynical, pessimistic and individualistic (Kupperschmidt, 2000; Smola and Sutton, 2002). They are viewed as less loyal to an organisation and more committed to their own careers. They also value a work life balance more than their generational predecessors (Smola and Sutton, 2002). Generation Xers are also viewed as the first generation to successfully embrace change within the workplace (Sayers, 2007). Research looking at Generation X women working in technology found that personal fulfilment was intrinsically connected to professional success and that this generation of women wanted support in terms of mentors, opportunities for promotion and more flexibility to achieve a work life balance (Feyerherm and Vick, 2005). For the generation which has grown up with technology and the digital age, Generation Y (1982 – present) are viewed as driven, demanding, highly confident and highly socialised (Smola and Sutton, 2002). Generation Yers have also been found to have higher self esteem, narcissism, anxiety and depression, whilst having a lower need for

social approval and more external locus of control (Twenge and Campbell, 2008). Generation Yers however have been found to be less independent than previous generations, requiring more structure, guidance and feedback (Feiertag and Berge, 2008).

Research looking specifically at women's career development suggests that women's career development is age related and develops in three distinct phases (O'Neil and Bilimoria, 2005). According to O'Neil and Bilimoria the three phases are firstly, the idealistic achievement phase. This phase is for women aged between 24-35 who base their career choices on the desire to positively impact others, gain career satisfaction and success. The second career phase is that of pragmatic endurance. This phase is for women aged 36-45, who are likely to be middle managers, and likely to express at least some dissatisfaction with their workplaces and perhaps their personal lives. The authors suggest the women in this phase, may be at a choice point in their working and personal lives, in that, they need to be making firm choices regarding motherhood and career commitment. Thus, the authors are perhaps suggesting here that women are unable to combine career commitment with motherhood. Women in this phase also tend to view their careers as extensions of themselves, in that their identities are inextricably linked to their work. Finally, the third career phase is that of re-inventive contribution, where women aged 46-60 have advanced in their careers and feel the need to contribute to others and their organisations through their work.

1.11 Literature review summary

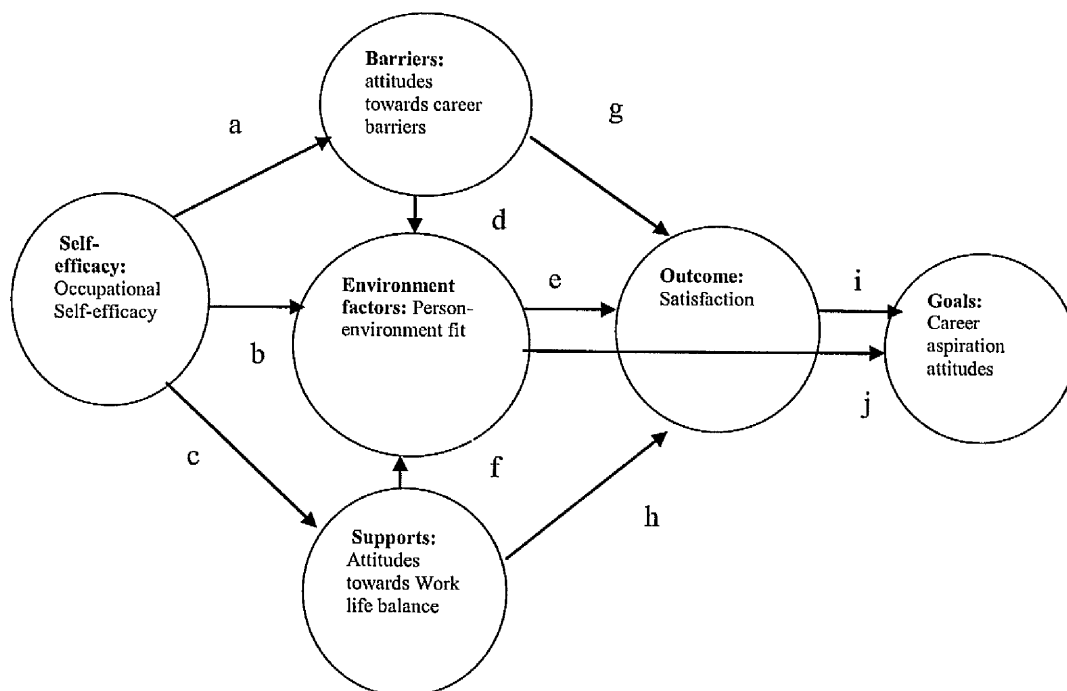
This review has discussed the literature of relevance to women's career development and progression. It has discussed gendered occupational segregation, male dominated and female dominated work environments, the lack of women within SET occupations and more specifically the ICT industry. The review has also discussed the more prominent theories of career development and those specifically looking at women in the workplace. The literature review concentrated on a discussion of SCCT as this is the theory which underpins the thesis. Issues surrounding stereotypes and attitudes have also been addressed. Furthermore, it has highlighted literature surrounding all of the measures included in the current study in order to show their relevance, importance and to justify their inclusion within a study on women's careers. The literature on and measurement of job satisfaction, self-esteem, self-

efficacy, gender role identity, person-environment fit and career motivation have all been reviewed. The review has also discussed some issues that are particularly relevant to women within the workforce, especially women working in male dominated occupations and industries, including barriers to progression, work life balance issues and parenthood.

1.12 Study direction

In light of the literature discussed, the present study intends to look at women who currently work in the male dominated, new, creative industry of computer games. The main aim of the study is to develop a model of career influences using Social Cognitive Career Theory (SCCT) as a framework. Figure 3 shows the hypothesized model based on a SCCT framework and the relationship between the variables. A number of research hypotheses separate to the model will also be considered; developed in light of the literature discussed.

Figure 3 Hypothesized structural model based on the SCCT model shown in figure 1.



Notes: The letters next to each path correspond to the respective hypotheses letters.

1.13 Career influences model hypotheses and justification

From a review of SCCT theory which the model is based on, the following hypotheses are proposed:

a: Occupational self-efficacy will have a direct impact on attitudes towards career barriers. This is proposed as Lent et. al. (2001) suggested that barriers and supports indirectly affect career choice, with domain specific barriers perceived more strongly than global barriers. They also found that higher coping efficacy was associated with the perception of lesser barriers, greater supports and more self-efficacy. Even if an individual has high self-efficacy for a career, positive outcome expectations and interest, they may still avoid that career if they perceive considerable barriers to attaining it (Brown and Lent, 1996). Lent et. al. (2003) found that supports and barriers are related to choice actions and choice goals indirectly via self-efficacy rather than directly. Therefore, higher self-efficacy will lead to a reduced perception of barriers.

b: Occupational self-efficacy will have a positive impact on person-environment fit. Theoretically, environments will recruit and retain people whose characteristics are congruent to the working environment and people will prefer and persist in environments that are congruent with their vocational personalities (Holland, 1973). Therefore, greater occupational self-efficacy should result in higher person-environment fit.

c: Occupational self-efficacy will have a direct impact on attitudes towards work life balance. It is proposed that greater self-efficacy will result in more positive attitude towards work life balance, in that, women will be satisfied with their work life balance or feel they can easily overcome any barriers.

d: Attitudes towards career barriers will have an impact on person- environment fit. It is proposed that individuals who have a more positive attitude towards their career

within an organisation or industry will have a better fit to that environment (Neufeld et. al., 2006).

e: Person-environment fit will be positively related to job satisfaction. Previous research has found this to be the case (O'Reilly et. al., 1991).

f: Attitudes towards work life balance will have an impact on person- environment fit. It is proposed that individuals who are satisfied with their work life balance will result in more fit with the environment.

g: Attitudes towards career barriers will have a direct relationship on satisfaction. It is proposed that if an individual feels there are either no barriers to progression or that these barriers may be easily overcome, they are more likely to be satisfied with their job and organisation. Previous research has found opportunities for career advancement as an important determinant of job satisfaction (Shields and Ward, 2001).

h: Attitudes towards work life balance will impact satisfaction. This is proposed as women who are happy with their work life balance will have higher satisfaction in their job and organisation. Evidence suggests that existence of flexible working patterns for example, is significantly related to job satisfaction, especially for female employees (Scandura and Lankau, 1997).

i: Satisfaction will have an impact on career aspirations. It is proposed that if an individual is satisfied they will have higher or more positive career aspirations, since previous research has found that job satisfaction can have significant impact on employees in terms of intention to leave, commitment and career advancement (Shields and Ward, 2001).

j: Person-environment fit will have an impact on career aspirations. Person-environment fit has been positively related to job satisfaction, organisational commitment and negatively related to turnover (O'Reilly et. al., 1991). Environments will recruit and retain people whose characteristics are congruent to the working environment and people will prefer and persist in environments that are congruent

with their vocational personalities. Therefore, it is expected that higher person-environment fit will result in greater career aspirations.

1.14 Other research hypotheses and justification

Aside from the hypotheses included in the proposed model a review of the literature resulted in the following hypotheses (H) being proposed:

H1: Grade will have an impact on the psychological measures in the study (two-way). Women's experiences and attitudes will vary depending on the grade they occupy within the industry.

H2: There will be a significant difference between the professional identities of the women and the psychological measures in the study (two-way). Women's experiences and attitudes will vary depending on the role they occupy within the industry.

H3: Women working in the games industry will play computer games in their leisure time (one-way). This is proposed as it is expected that women enter the industry due to their interest in games and gaming (Consalvo, 2008).

H4: Women working in the computer games industry will be young, 35 or under (one-way). This is proposed since previous research suggests the industry is a young person's industry (Deuze et. al., 2007) and an industry that values youth (Consalvo, 2008).

H5: Women working in the games industry will have high extrinsic and high intrinsic motivation (one-way). The games industry has been associated with a number of motivations and rewards such as higher than average pay (Oxford Economic, 2008), an external motivation and workers having a passion for games (Consalvo, 2008) an internal motivation.

H6: Women working in the games industry will have high person-environment fit (job and organisational fit) (one-way). This hypothesis is proposed since it is also proposed that women within the industry will have a high masculine identity (H9)

and therefore their identity will be concurrent with the masculine environment in which they work.

H7: Women working in the masculine environment of the games industry will have high satisfaction (one-way). This is proposed since women will be involved in the games industry due to a 'passion for games' (Consalvo, 2008). Therefore, it was deemed fitting to propose the women would be highly satisfied.

H8: Women in the games industry will have low gender identification at work (one-way). Research has found that strongly gender identified college women liked feminine occupations significantly more than less strongly identified women (Oswald, 2008). Therefore, women in the male dominated games industry will have low gender identification.

H9: Women working in the development of games will have a masculine gender identity (one-way). This is proposed since Bem (1974) suggested that high sex-typed individuals are uncomfortable performing cross sex tasks since it is incongruent with their sex role orientation. Furthermore, Long (1989) suggests that women with high masculine sex role orientation experience less strain and cope more effectively in masculine occupations.

H10: The Bem Sex Role Inventory factors will be different for women in games than in Bem's original study (Two-way). This is proposed as the BSRI is nearly 40 years old.

H11: Women working in the games industry will have high occupational self-efficacy and high self esteem in the workplace (one-way). In general, people are more interested in things that they show their greatest ability and vice versa. Therefore it is proposed that women in this male dominated environment will have high self-efficacy (Chang, 2003). Positive (high) levels of self esteem are typically found in women who are employed in male dominated occupations. People with high self esteem have been found to show greater persistence in the face of adversity compared to people with low self esteem (Hogg and Cooper, 2003).

H12: Women working in the masculine environment of the games industry will have a negative attitude towards their work life balance (one-way). This is proposed as the long hour's culture and the lack of work life balance associated with the wider ICT sector (WWW-ICT, 2004; Griffiths, Moore and Richardson, 2007), has also been found to persist in the games industry (IGDA, 2004; Consalvo, 2008).

H13: There will be a significant difference between women with and women without children with regards to the psychological measures in the study (two-way). This is proposed due to the lack of a work life balance and a family friendly culture associated with the wider ICT and SET sectors (WWW-ICT, 2004).

Chapter 2: Methodology

The thesis consists of two phases. Phase one consisted of a qualitative pilot study with women in the games industry; to aid the development of the study questionnaire. Phase two, the main study, consisted of the study questionnaire, thus quantitative in nature. This section will discuss both these phases.

2.1 Phase One: Pilot study

A pilot study was conducted early on in the research in order to help inform the development of the questionnaire and the most appropriate, as well as the most relevant areas of investigation.

2.1.1 Biographical details

The pilot study consisted of one-to-one semi-structured interviews with seven females working in the production of computer games in one games studio in the North West of England. Their ages ranged from the youngest 30 to the oldest 41. One of the participants was Chinese; the remaining six were white British. Two were single, two married and three lived with their partners. All were heterosexual and only one had children and she had one child. None of the women were lone parents, carers for another dependent or had any health problems. Three months was the least amount of time in their current post five and a half years the longest. Three of the women had not been promoted in the past five years, two had once and one had twice. With regards to relocating for a promotion, three of the women said they would, with four saying they would not. The women worked in various areas of core content creation work within the industry; one was a coder, one a sound engineer, three were artists and two were animators.

2.1.2 The questions

The interview questions were split into three areas; perceptions of the industry, your career, and women in the industry. The interviews were conducted individually, on the same day in the same office. The shortest interview was 20 minutes and the

longest nearly 50 minutes. All the women volunteered to participate in the study, with anonymity and confidentiality assured.

2.1.3 Analysis

All interviews were digitally recorded and transcribed verbatim. The interview transcripts were then analysed thematically by looking for themes in order to ascertain issues that were of interest (Braun and Clarke, 2006). As well as the one-to-one interviews, eight women working in the games industry answered questions via email (six were from America and two from the UK). Four were artists; one was an associate producer, one a senior producer, one a writer, and the other a programmer.

2.1.4 Summary of main findings

- ‘Women should not to be intimidated by being the only woman’.
- The acknowledgment that it is rare to see women within the industry, especially in programming and design.
- What they enjoyed most about their jobs was the creative element, the challenges, variety of role, the company they worked for and the people they worked with.
- The long hour’s culture was viewed as the biggest drawback.
- They felt women bring to the industry; a different perspective, different view point and a more professional environment.
- Interviewees viewed more women in the industry as changing the image of the industry as a male domain and challenging the notion that games are for boys.
- Qualities needed for progression included; liking games, being talented, hard working, outspoken, confident, tough and resilient.
- To work in the industry, the interviewees stated that ‘women should not to be offended by porn, farting or swearing’.
- Women in the industry viewed themselves and other women in the industry as tomboyish and not very ‘girly girls’³⁹.

³⁹ ‘Girly girls’ was a phrase also used by earth science students in Van de Brink and Stobbe (2009) study to distance themselves from the feminine.

- Men were viewed as dominating the industry since they like and play games; therefore they want to make them.

2.2 Phase Two: Main study

The findings from the pilot interviews enabled the direction of the research. It was evident from the interviews that the female game workers interviewed somewhat distanced themselves from their feminine identity. Perhaps a strategy used in order to fit into the male environment. There was also some indication that women had to overcome numerous psychological barriers such as solo status, and organisational barriers such as long hours, in order to work in the industry. Yet despite the barriers and drawbacks it was also apparent that the women enjoyed their jobs. The findings from the qualitative work were incorporated into the survey in a number of ways. For instance, it was evident from the qualitative findings that identity was an issue for women in the industry, therefore the BSRI as a measure of gender role identity and a measure of gendered identification in the workplace were incorporated into the survey. It was also evident that the issue of long hours and work life balance were important to include in the study.

2.2.1 Sampling

The sample inclusion criterion was women working in the development of computer games. The sample was purposive, in that, women needed to be working in the computer games industry, at any level within the industry from junior through to executive. The sample was opportunistic, in that, all women fulfilling the former criteria and agreeing to participate in the study were included. The sample was self selective as the questionnaire was marketed to attract women who work in the development of games in a myriad of ways; contacting game studios directly, posting on message boards through women in games facebook sites and internet sites.

2.2.2 Study promotion

In preparation for data collection and to promote the study; electronic and paper mail shots were distributed to games companies throughout the UK, Europe and America (see Appendix 2 for the study letter/email). A mail shot of games organisations

consisted of a total of 64 organisations in the UK, USA, Australia, Canada and other parts of Europe. The survey link and information was emailed to over 100 computer game organisations worldwide. The three games related associations which are; the International Game Developers Association (IGDA - an American based association), the Entertainment and Leisure Software Publishers Association (ELPSA), and Tiga, the independent game developers association (both UK associations) were both mailed and emailed. ELPSA put the questionnaire link in their October 2008 newsletter. The study was advertised in the November 2008 newsletter of Girl Geek Dinners, a network for female IT professionals. It was also sent to all 519 members of the London Girl Geek Dinners face book group. The questionnaire link was sent to the IGDA (International Game Developers Association) Women in Games Special Interest Group e-mail list, which has nearly 700 members. Study information was also emailed to all members of the 'women in technology network' that has approximately 9000 female technologists as members and to all members of the 'UK resource centre for women' with approximately 1500 members.

The study was presented at the Women in Games (WIG) 2008 conference held at Warwick University, 10-12th September 2008 and via a poster presentation at the 'Creating second-lives' conference held at Bangor University, 24-25th October 2008. Study information was emailed to 22 contacts made at the WIG conference for people to forward on. Internet hypertext weblinks to the study were placed on prominent national and international computer games websites such as; www.womengamers.com, www.womeningamesinternational.com, www.gamesnet.com and www.gamejournal.org. Game industry related groups on the social network sites of facebook and LinkedIn were also utilised to advertise the study and online questionnaire. The study was also sent to over 600 people on the games network listserv emailing list.

2.2.3 Distribution

The study design is quantitative in nature and involved an online survey which was available at www.survey.bris.ac.uk/breakingbarriers/games (a hard copy of the questionnaire was also available on request). For all formats of the questionnaire

anonymity and confidentiality was assured. The study was advertised and the questionnaire link was available on numerous game websites and social network sites. Electronic and paper mail shots were distributed to games companies throughout the UK, Other parts of Europe, Canada and America. The questionnaire was online from 1st September 2008 until 28th February 2009. The sample inclusion criterion was, any women employed in the computer games industry.

2.2.4 Ethical considerations

Ethical approval was sought and approved from the University of Liverpool.

2.2.5 Study design

In total 547 questionnaires were completed. The questionnaire (see Appendix 1) aimed to target women working in the development of computer games. However, 93 men also completed the survey. Of the 454 women that completed the questionnaire, 105 were in a non-developmental role; in areas such as Human Resources (HR), marketing and administration, 29 were academics in the area of games, leaving a total of 320 females in a developmental or core content creation role.

Information about the study was disseminated to professional bodies and via journals, media publications and game websites. The internet was utilised as the main means of questionnaire distribution and data collection since it was important to make the questionnaire available to any women working in games development who wanted to participate. It is recognised that internet based research is still in its infancy (Hewson 2003). Although the internet has become a more popular medium for data collection, some researchers suggest more research is needed to assess its benefits and weaknesses (Gosling et. al., 2004). The internet has been used for a diverse range of studies including; personality testing and anonymous focus group research. Moreover, there is growing support for internet based questionnaire administration (i.e. Corley and Sheepers 2002; Buchanan and Smith 1999). Web-based polls have been noted for their potential to reach very large audiences, inexpensively, with rapid replies (Kehoe and Pitkow, 1996; Schmidt, 1997). Through a meta-analysis of response rates to web or internet based surveys, Cook, Heath and Thompson (2000)

suggest that the number of contacts, personalised contacts and pre-contacts were the factors most influential to a higher response rate in the web based studies analysed. Although caution may need to be taken when using the internet for general population surveys the internet's advantage over traditional modes of data collection when used for specific populations; populations which the researcher knows will be 'internet savvy' cannot be overlooked (Aoki and Elasmir, 2000, see Cook et. al., 2000). Research has found that non-response to online surveys was due in the main to technology problems, such as a lack of access and a lack of 'internet savvy' (Raziano et. al., 2001).

An online survey was deemed an appropriate and the best method of data collection for the study. Women working in the development of computer games and in non-developmental roles within the industry are computer literate and have access to a computer in the workplace. This ensured that the opportunity for inclusion was available to all women working in the industry.

2.2.6 The development of the survey

A questionnaire was developed using a combination of new and existing measures. This consisted of eleven sub-sections. Section one sought personal and professional biographical information (e.g. profession, grade/level, years in the industry, education, age, gender, nationality, ethnicity, sexuality, disabilities, if they had children and if the participant was a single parent, or a carer for any other dependent).

Section two focussed on self esteem. Using Rosenberg's Self Esteem Scale (RSE), to get a self esteem score for participants at work (Rosenberg, 1965). The RSE consists of ten questions measured on a four point Likert scale, ranging from 1 'strongly disagree' to 4 'strongly agree' (questions 2,5,6,8 and 9 were reverse scored). Many studies report strong reliability alphas for the RSE. For example, Robins et. al. (2001) reported alpha reliabilities from $\alpha = 0.88$ to 0.90 across six assessments. Participants have higher self esteem, the higher their score. Scores from 0-25 was considered low self esteem and scores 26-40 viewed as high. Rusticus et. al. (2004) on a sample of University students validated the RSES cross-culturally. From a sample of 543 American students $M=31.9$, from a sample of 1443 Canadian students $M=31.0$ and

from a sample of 300 New Zealand students $M=31.9$. With regards to gender differences, Hirschy and Morris (2002) from a sample of 231 American undergraduate students found normative scores of, male $M= 34.17$ ($SD=4.53$) and for female $M=33.17$ ($SD=4.57$). Cronbach alphas for women in the current sample were high; $\alpha=.867$.

Section three looked at work life balance. The eight questions developed from the Breaking Barriers project asked participants to indicate the extent to which they agree/disagree with statements regarding work life balance issues; measured on a six point Likert scale, ranging from 1 'very strongly disagree' to 6 'very strongly agree'. Participants were asked the extent they were happy with their work life balance, they felt the number of hours they worked affected their personal health, the extent they felt the number of hours they work does not affect their personal relationships (reverse scored), if work life balance was bad for productivity (reverse scored), if awareness of work life policies needs to be improved (reverse scored), if a work life balance is part of their workplace culture, if their colleagues approved when they needed to leave work due to outside commitments and if there is a long hours culture within their organisation (reverse scored).

Section four measured belief in ability using the short version of the Occupational Self-Efficacy Scale developed by Rigotti, Schyns and Mohr (2008), ($\alpha=0.90$). The scale consists of six items measured on a six point Likert scale, ranging from 1 'not at all' to '6 completely true'. The long version was developed by Schyns and von Collani (2002) and consisted of 20 items. For the short version used in this thesis, scores between 0-18 were considered low self-efficacy, 19-24 medium self-efficacy and 24-32 high self-efficacy. In a cross-cultural study, Rigotti et. al. (2008) found the following norms for the occupational self-efficacy scale: German $M= 5.09$ ($SD=.61$), Sweden $M=4.54$ ($SD=.87$), Belgium $M=4.68$ ($SD=.73$), UK $M=4.63$ ($SD=.80$) and Spain $M=4.75$ ($SD=.79$). Cronbach alphas for women in the current sample were high; $\alpha=.883$.

Section five measured person-job fit and person-organisation fit, using a scale developed by Lauver and Kristof-Brown (2001). The scale consists of eight items,

measured on a seven point Likert scale, ranging from 1 'very strongly disagree' to 7 'very strongly agree'. The scale is divided into two subscales; person-job fit ($\alpha=0.79$) (comprising items 1, 2, 3, 4 and 5) measures how well an individual perceives they match their job and person-organisation fit ($\alpha=0.83$) (comprising items 6, 7 and 8, question 8 is reverse scored) measures how well an individual perceives they match with a single organisation in a single industry. Higher scores indicate more fit. 0-19 was viewed as low fit, 20-24 medium fit and 25-35 high fit for the person-job fit. For the organisational fit; 0-9 was viewed as low fit, 10-14 medium fit and 15-21 high fit. From an American adult sample of 231 participants, Lauver and Kristof-Brown (2001) reported the following norms; person-job fit $M=6.22$ ($SD=.86$) and person-organisational fit $M=5.23$ ($SD=1.45$). Cronbach alphas for women in the current sample were high; job fit $\alpha=.896$ and organisational fit $\alpha=.780$.

Section six measured work motivation (intrinsic and extrinsic) using the Work Preference Inventory (Amabile, Hill, Hennessey and Tighe, 1994). The scale consists of thirty items, measured on a four point Likert scale, ranging from 1 'never true', to 4 'always true'. The scale is divided into two subscales; intrinsic and extrinsic motivation. Intrinsic motivation comprising items 1, 3, 5, 9, 11, 13, 14 (reverse scored), 7, 8, 20, 23, 26, 27, 28 and 30. Extrinsic motivation comprising items 4, 10, 16, 19, and 22 (reverse scored), 2, 6, 12, 15, 18, 21, 24, 25 and 29, measures how extrinsically motivated individuals are ($\alpha=0.80$). High scores indicate higher motivation for both intrinsic and extrinsic motivation. Low motivation was scored between 0-30 and high 31-60 for both motivations. Amabile et. al. (1994) from an American adult sample found the following norms; for intrinsic motivation; total (N 1027) $M=3.16$ ($SD=.34$), males (N 815) $M=3.14$ ($SD=.35$), females (N 206) $M=3.26$ ($SD=.32$) and for extrinsic motivation; total $M=2.42$ ($SD=.39$), males $M=2.44$ ($SD=.40$), females $M=2.41$ ($SD=.41$). Cronbach alphas for women in the current sample were higher; intrinsic motivation $\alpha=.769$ than extrinsic motivation $\alpha=.630$.

Section seven looked at attitudes towards career progression and promotion. The five questions developed from the Breaking Barriers project asks participants to indicate the extent they agree/disagree with statements on career progression and promotion, measured on a six point Likert scale, ranging from 1 'very strongly disagree' to 6

'very strongly agree'. Participants were asked; if promotion is important to them, if they intend to climb the career ladder and are prepared to make personal sacrifice in order to do so, if they are progressing in their career, if there are not enough opportunities for them to progress in their career (reverse score) and if being recognised in their field is important to them.

Section eight measured job and organisation satisfaction. This was measured via the job and organisational satisfaction scale of the Pressure Management Index (Williams and Cooper, 1998). The scale consists of twelve items, measured on a 6 point Likert scale. The scale is divided into two subscales; job satisfaction (comprising of items 2, 3, 6, 7, 9 and 12) measures how satisfied participants are with the type of work they do ($\alpha=0.89$) and organisation satisfaction (comprising of items 1, 4, 5, 8, 10, and 11) measures how satisfied participants are with the way the organisation is structured and the way it works ($\alpha=0.83$). The Likert scale ranges from 1 'very strongly disagree' to 6 'very strongly agree'. Items measure satisfaction with communication, the actual job, motivation, supervision, changes and innovations, work and tasks, personal development, resolution of conflicts, use of skills, the psychological 'climate', and structure of the organisation. Higher scores indicate a greater level of satisfaction. For both job and organisational satisfaction scores; 1-20 were considered low satisfaction and 21-36 high. For total satisfaction, low scores were between 0-30, 31-49 medium and 50-72 high. Williams and Coopers (1998) found from a sample of 4946 adults in the UK, the following norms; job satisfaction $M=22.60$ ($SD=5.39$) and organisational satisfaction $M=19.34$ ($SD=4.65$). Cronbach alphas for women in the current sample were high; job satisfaction $\alpha=.756$ and organisational satisfaction $\alpha=.792$.

Section nine measured the nature and strength of an individual's gender role identity at work using Bem's (1974) Sex Role Inventory (BSRI). The original scale consists of sixty characteristics and participants are asked to describe themselves on each of these traits by using a seven point Likert scale, ranging from 1 'never true' to 7 'always true'. The scale measures three primary sub scales; masculinity ($\alpha=0.86$), femininity ($\alpha=0.82$) and androgyny ($\alpha=0.85$) (a social desirability score can also be computed, $\alpha=0.75$). The scale consists of twenty masculine characteristics twenty

feminine characteristics and twenty neutral characteristics. On the basis of the median split of the responses to masculine and feminine adjectives, each individual may be classified into one of four categories; undifferentiated, feminine, masculine or androgynous. An undifferentiated person has a relatively low score on both the femininity and masculinity scales, a feminine typed person has a high score on the feminine scale and a low score on the masculine scale, the reverse is true of a masculine typed individual, and an androgynous person has high scores on both scales.

The short version of the BSRI consists of twenty items; ten masculine and ten feminine characteristics and yields more comparable and reliable scores ranging from $\alpha=0.84$ to $\alpha=0.86$ for the masculine score and ranging from $\alpha=0.86$ to $\alpha=0.87$ for the feminine score (Bem, 1981, see Campbell et. al., 1997). However, for the purpose of this thesis, one of the feminine characteristics; 'loves children' was omitted. This omission was deemed necessary since the thesis is focusing on women and gender in the workplace, and in the case of this study the workplace concerned has nothing to do with children. Therefore, the gender role measure used in the study contained nineteen characteristics as opposed to twenty. For the masculine gender role identity a score between 0-30 was viewed as low, 31-49 medium and 50-70 high. For feminine gender role identity a score between 0-25 was viewed as low, 26-40 medium and 41-63 high. For the androgyny gender role identity, scores between 0-23 were viewed as high, 24-46 medium and 47-70 low. Cronbach alpha's for the sample were high; masculinity $\alpha=0.879$, femininity $\alpha=0.895$ and therefore higher than Bem's original study.

Section ten measured gender identification. The measure consists of four questions modified by Schmader (2002), from the importance subscale of the Collective Self Esteem Scale (Luhtanen and Crocker, 1992); modified to assess the perceived importance of gender identity to self-definition. Schmader averaged the responses from participants to form a reliable index of gender identification ($\alpha=0.70$). Participants rated the following four items on a scale ranging from 1 'strongly disagree' to 5 'strongly agree'. The four questions were being a woman is an important part of my self- image, being a woman is unimportant to my sense of what

kind of person I am (reverse score), being a woman is an important reflection of who I am, and being a woman has very little to do with how I feel about myself (reverse score). For the purpose of the study participants were asked questions in relation to gender identification within the workplace. High gender identification was viewed as scores between 15-24 and low 0-14. The Cronbach alpha for the sample was $\alpha=0.753$.

Section eleven measured attitudes towards barriers to women's career progression. The six questions developed from the pilot study asked participants to indicate the extent they agree/disagree with statements on barriers to women's career progression, measured on a six point Likert scale, ranging from 1 'very strongly disagree' to 6 'very strongly agree'. Participants were asked the extent they agreed/disagreed that; the glass ceiling exists (reverse scored), equal opportunities legislation means there are no barriers to women in employment, some careers are more female friendly than others (reverse scored), there are no covert barriers to women's achievement, women are well represented in my profession and my organisation.

2.2.7 Data analysis

Data was analysed using the statistics package SPSS version 18. Parametric and non-parametric analysis was utilised as appropriate on the data. A structural equation model (SEM) was also employed for analysis using AMOS 18.

2.2.8 Structural Equation Modelling (SEM)

Structural Equation Models (SEMs) are statistical models used primarily to evaluate whether theoretical models are plausible when compared to observed data. Theory in the social sciences tends to be rich and complex, where multiple outcomes are seen as the result of multiple interacting factors and chains of mediation. SEMs allow for the representation of complex theory in a single, integrated model. When a researcher believes that a set of variables define a construct and they are related in a certain way based on theory and empirical research, then an SEM is employed. For example, an occupational psychologist might hypothesize that an individual's self esteem influences their promotion opportunities. The overriding goal of SEM is: 'to

determine the extent to which the theoretical model is supported by the sample data' (Schumacker and Lomax, 2004, p2). The objective of using SEM is to construct a statistically significant model that has both practical and theoretical meaning. Therefore, SEM is a confirmatory not explanatory technique (Ullman, 2001).

Four main reasons have been given for the use and popularity of SEM (Schumacker and Lomax, 2004). Firstly, the use of multiple observed variables, secondly, validity and reliability, thirdly, the ability to analyse more advanced theoretical models and finally, SEM software programmes are user friendly. SEM can be used for either observational or experimental designs. Models consist of measured and latent variables. Latent variables are hypothetical constructs that cannot be directly measured. Examples of latent variables include motivation, social class and self concept. Since latent variables cannot be observed directly they cannot be measured directly so the researcher has to define the variable by behaviour which is related to it. Therefore, the latent variable has to be linked to a variable which can be measured. Due to this link, the observed measures used are critical when it is presumed they represent an underlying construct (Byrne, 2001).

Latent variables can be exogenous and endogenous. Exogenous latent variables are the same as independent variables, in that, they 'cause' difference in the values of other latent variables in the model. Changes in exogenous variables are not explained by the model itself but due to other variables external to the model such as gender or age. Endogenous latent variables are similar to dependant variables and are influenced by the exogenous variables and as such are influenced by the latent variables in the model. There are a number of uses to SEM analysis. The goal of SEM analysis might be to test a model, test a specific hypothesis about a model, to modify an existing model or test a set of related models. There are various requirements for conducting an SEM; that data is normally distributed and relationships between variables are linear. With regards to sample size there is some disagreement; Boomsma (1982) suggests 4000 cases, whereas Loehlin (1992) suggests 100-200 cases with 2-4 latent variables. Hoyle (1995) also recommends a sample size of at least 100-200. With regards to sample size more recently, Boomsma and Hoogland (2001) suggest that sample size is conditional on the data and the model and as such there is no standard criteria. However, the authors found with a

sample size of < 200, problems of non-convergence and improper solutions existed. The authors suggest that reliable and valid measurement instruments reduce these problems. There is also disagreement with the number of measured variables per latent variable. With four measured variables per latent variable preferable although three is acceptable (Schumacker and Lomax, 2004). According to Byrne (2001), two measured or observed variables per latent variable, are acceptable especially when the observed/measured variables: *'represent subscale scores, item scores, item pairs and/or carefully selected item bundles'* (p 10).

For the SEM element of analysis, missing data was filled for the psychological measures using person mean substitution. If more than 20% of a person's data was missing, then their data was dropped from the study. Person mean substitution has been shown to produce good representation with less than 20% missing data (Downey and King, 1998).

Chapter 3: Results

The following section will look at the study's results in the following order, descriptive statistics, correlations, t-test analysis, ANOVA's undertaken and finally the structural equation model (SEM). A factor analysis was also conducted on the Bem sex role inventory.

3.1 Descriptive statistics

Personal and professional biographical data

Gender

17% (N 93/547) of participants were male and 83% (N 454/547) were female. The remainder of the data analysis will focus on the female participants only due to the length constraints of the thesis and since they are the main focus of study.

Age

The majority of the participants were in the age range 26-35 with nearly half, 47% (N 213/453) of participants in this age range.

Table 3. 1 Age ranges

Age	Number	Percent
18-25	99	21.9
26-35	213	47.0
36-45	101	22.3
46-50	21	4.6
51+	19	4.2
Total	453	100.0
Missing	1	
Total	454	

Ethnic origin

84% (N 380/452) of participants were from a white ethnic background. The majority of the participants were in the ethnic group of 'other white background' with 53% (N 238/452). The second most common ethnic group was 'white British' with 25% (N 114/452) in this ethnic group.

Table 3.2 Ethnicity

Ethnic Origin	Number	Percent
White British	114	25.2
White Irish	28	6.2
Other White background	238	52.7
Indian	3	.7
Pakistani	1	.2
Chinese	11	2.4
Japanese	6	1.3
Other Asian background	6	1.3
Black African	2	.4
White and Black Caribbean	4	.9
Other Mixed background	20	4.4
Any other ethnic background	12	2.7
Prefer not to say	7	1.5
Total	452	100.0
Missing	2	
Total	454	

Country of work

Nearly half, 42% (N 189/454) of participants worked in the USA and over a quarter, 30% (N 134/454) worked in the UK.

Table 3.3 Country of work

Country of work	Number	Percent
UK	134	29.5
USA	189	41.6
Canada	35	7.7
Australia/New Zealand	24	5.3
Europe	56	12.3
Other	16	3.5
Total	454	100.0

96 of the UK participants worked in a developmental role within the games industry.
138 of the USA participants worked in a developmental role.

Table 3.4 Country of work by role

Country of work	Developmental role	Non-developmental role	Academics
UK	96	28	10
USA	138	39	12
Canada	22	12	1
Australia/NZ	19	3	2
Europe	35	18	3
Other	10	5	1
Total	320	105	29

Nationality

56% (N 252/452) of participants were from a Non-EU country (i.e. USA, Canada, Australia and New Zealand).

Table 3.5 Nationality

Nationality	Number	Percent
British	121	26.8
Other EU Country	79	17.5
Non-EU Country	252	55.8
Total	452	100.0
Missing	2	
Total	454	

Marital status

The majority, 35% (N 159/452) were single, 31% (N 140/452) lived with a partner and 28% (N 128/452) were married.

Table 3.6 Marital status

Marital Status	Number	Percent
Single	159	35.2
Married	128	28.3
Widowed	2	.4
Divorced or separated	23	5.1
Living with partner	140	31.0
Total	452	100.0
Missing	2	
Total	454	

Sexuality

The majority were heterosexual, 91% (N 85/93).

Children

79% (N 357/453) did not have children. 18 of the 96 participants with children were lone parents. The majority of participants were not a carer for any other dependent, 96% (N 430/447).

Health problems or disabilities

4% (N 19/447) had a health problem or disability. The majority of health problems were diabetes, asthma and depression.

Professional identity

Participant's professional identity varied 15% (N 66/454) were artists or animators, 14% (N 62/454) were designers, 13% (N 58/454) were producers and 13% (N 57/454) were executives. Nearly a quarter, 23% (N 105/454) had the professional identity 'other' which included those working in Human Resources (HR), Public Relations (PR), administration, project management, recruitment and marketing.

Table 3 7 Professional identity

Professional Identity	Number	Percent
Artist/Animator	66	14.5
Coder	26	5.7
Writer	11	2.4
Designer	62	13.7
Producer	58	12.8
QA/Tester	24	5.3
Audio/Sound Engineer	5	1.1
Lecturer	23	5.1
Researcher	6	1.3
Engineer	11	2.4
Executive	57	12.6
Other	105	23.1
Total	454	100.0

Grade/level

Participants grade/level varied a quarter, 25% (N 112/450) were managers, a quarter, 25% (N 111/450) were middle level, 18% (79/450) were senior and 15% (N 68/450) were junior. For further analysis, the grades were then reduced to junior, middle and senior with senior consisting of senior, lead and manager. Some of the 'other' grades were also categorised, resulting in over half (56%) of participants being in a senior grade.

Table 3.8 Reduced grade or level

Reduced grade/Level	Number	Percent
Junior	72	16.0
Middle	127	28.0
Senior	249	56.0
Total	448	100.0
Missing	6	
Total	454	

For the participants in a developmental area of work, 57% were in a senior grade. Within a non-developmental role, 56% were in a senior grade and 45% of academics were in a senior grade. For those in junior grades the majority, 64% were in a developmental role.

Table 3.9 Reduced grade by area of work

Grade	Developmental role			Non-Developmental role			Academics			Total
	Number	% within grade	% within devel role	Number	% within grade	% within Non devel role	Number	% within grade	% within academic role	
Junior	46	63.9	14.6	21	29.2	20.2	5	6.9	17.2	72
Middle	91	71.7	28.9	25	19.7	24.0	11	8.7	37.9	127
Senior	178	71.5	56.5	58	23.3	55.8	13	5.2	44.8	249
Total	315			104			29			448

Job title

There were a number of different job titles including game designer, owner, CEO, environmental artist, content developer, lead writer, software engineer, assistant producer, project manager, animators and game-play programmer.

Number of hours

The majority of participants, over half, 53% (N 238/447) worked between 39-45 hours per week. 32% (N 144/447) reported working 46 plus hours per week.

Table 3.10 Number of hours approximately worked in an average week

Number of Hours	Number	Percent
Less than 39	65	14.5
bet 39-45	238	53.2
bet 46-55	99	22.1
bet 56-65	30	6.7
66+	15	3.4
Total	447	100.0
Missing	7	
Total	454	

Employment status

The majority of participants worked full time, 88% (N 397/452) and 6% worked part-time (27/452). For the 6% of participants that worked 'other' this included freelance workers, contracted workers and those who had made flexible hour arrangements with their employee.

Table 3.11 Employment status by area of work

Developmental			Non-developmental			Academics			Total
Full time	Part-time	Other	Full time	Part-time	Other	Full time	Part-time	Other	
277	21	20	93	5	7	27	1	1	452

Educational level

36 of the participants were educated to doctorate level. The majority were educated to A Level (231).

Table 3.12 Educational level of participants

Educational Level	Number
GCSE	90
A* Level	231
Undergraduate Degree	115
Postgraduate Degree	27
Doctorate	36

Length of time in the games industry

The majority of participants had been in the games industry for either 1-3 years, 35% (N 154/444) or 4-7 years, 24% (N 107/444). Only 28% (N 125/444) had worked in the industry for more than 8 years.

Table 3.13 Length of time in the games industry

Time in industry	Number	Percent
less than 1 year	58	13.1
1-3 years	154	34.7
4-7 years	107	24.1
8-11 years	72	16.2
12-15 years	31	7.0
16-19 years	13	2.9
20-23 years	6	1.4
24-27 years	2	.5
32+ years	1	.2
Total	444	100.0
Missing	10	
Total	454	

Future intentions

The majority, 62% (N 279/449) did plan to stay in the games industry in five years time, with 33% (N 147/449) unsure as to whether they would stay in the industry or not. 21 participants gave a reason as to why they would leave the industry. Reasons included lack of opportunities, not enough work life balance, not a female friendly industry and bad working atmosphere.

Promotion

33% (N 144/434) had not been promoted in the past five years. 27% (N 118/434) had been promoted once and 21% (N 97/454) twice.

Table 3.14 Number of times the participants had been promoted in the past five years

Number of times Promoted	Number	Percent
None	144	33.2
1	118	27.2
2	97	22.4
3	52	12.0
4	21	4.8
5+	2	.5
Total	434	100.0
Missing	20	
Total	454	

Relocation

Half, 50% (N 226/449) would relocate compared to 27% (120/449) who would not and 23% (N 103/449) that did not know. Participants in all areas of work were more willing to relocate, than not willing or unsure.

Previous industries

76% (N 344/450) had worked outside of the games industry. The most popular industry from which the participants came from was film and TV (30), followed by IT (23) and then retail (21).

Table 3.15 The industries participants who have worked outside of games have worked in

Other Industries	Number
Film and TV	30
IT	23
Retail	21
Hospitality industry	19
Education	16
Web development	12
Animation in film	7
Multimedia	5
Advertising	4
Sales	3
Music industry	3

Game play

82% (371/452) played computer games in their leisure time. Participants played role playing games the most (92), followed closely by casual games (90).

Table 3.16 Computer games genres participants like to play in their leisure time

Game Genres	Number
Role Play	92
Casual	90
MMORPG's	69
Puzzle	62
First Person Shooter	54
Action	40
Adventure	39
All types	33
Racing	9
Arcade games	3

Career motivation

All participants had high intrinsic motivation, and 96% (N 436/454) had high extrinsic motivation.

Table 3.17 High/low extrinsic motivation

Extrinsic Motivation	Number	Percent
High/low		
Low (0-30)	18	4.0
High (31-60)	436	96.0
Total	454	100.0

Table 3.18 High/low intrinsic motivation

Intrinsic Motivation	Number	Percent
High/low		
High (31-60)	454	100.0

Interesting findings from the descriptive analysis from the career motivation statements include that participants in other parts of the world had the highest mean score for extrinsic (M 39.88) and intrinsic (M 46.44) motivation, with those working in Europe (excluding the UK) having the least extrinsic motivation (M 37.63) and those in the UK having the least intrinsic (M 44.17) motivation. Participants aged 18-25 had the highest extrinsic motivation (M 39.00) and those aged 45-50 the least (M 37.38). Participants aged 18-25 had the least intrinsic motivation (M 45.09) and those aged 45-50 the most (M 46.43). Participants in the senior grades had the least extrinsic motivation (M 38.17) and those in junior grades the most (M 39.39). For intrinsic motivation participants in the junior grades had the least (M 44.64) and participants in the senior grades had the most (M 45.95).

Table 3.19 Mean and standard deviations of intrinsic and extrinsic motivation

Career motivation	Intrinsic motivation		Extrinsic motivation	
	M	SD	M	SD
All participants	45.43	5.468	38.61	5.075
Country: UK	44.17	5.528	38.72	5.004
Country: USA	46.30	5.419	38.57	5.243
Country: Europe	44.63	5.750	37.63	4.426
Country: Canada	47.58	5.233	37.62	5.632
Country: Australia/ New Zealand	44.82	4.726	39.07	4.763
Country: Other	46.44	5.512	39.88	5.668
Age: 18-25	45.09	5.115	39.00	4.965
Age: 26-35	45.13	5.706	38.56	5.429
Age: 36-45	46.13	5.665	38.63	4.630
Age: 46-50	46.43	5.105	37.38	4.674
Age: 51+	45.89	3.665	38.68	4.097
Grade: Junior	44.64	4.926	39.39	5.087
Grade: Middle	44.89	5.774	39.06	5.311
Grade: Senior	45.95	5.473	38.17	4.915

Job and organisational fit

The majority of participants had high job and organisational fit (84% and 69% respectively).

Table 3.20 High/low job fit

High/Low Job Fit	Number	Percent
Low (0-19)	18	4.0
Medium (20-24)	53	11.7
High (25-35)	383	84.4
Total	454	100.0

Table 3.21 High/low organisational fit

High/Low Org Fit	Number	Percent
Low (0-9)	27	5.9
Medium (10-14)	116	25.6
High (15-21)	311	68.5
Total	454	100.0

Analysis by country of work found participants in Europe (Excluding the UK) had the highest job fit (M 30.60) and those in Australia/NZ had the lowest (M 27.32). Participants in other parts of the world had the highest organisational fit (M 17.44) and women in Europe the least (M 15.51). With regards to age, participants aged 18-25 had the lowest mean score for job fit (M 28.94) and those aged 36-45 had the highest (M 29.81). Participants aged 51+ had the most organisational fit with the highest mean score (M 16.95) and those aged 26-35 had the lowest (M 15.90). Participants in the junior grades had the highest mean score for job fit (M 29.49) and those in the middle grades had the lowest (M 29.07). However, those in the middle

grades had the highest organisational fit (M 16.21) and participants in the senior grades the lowest (M 16.08).

Table 3.22 Mean and standard deviations of job and organisation fit

Person-environment fit	Job Fit		Organisation Fit	
	M	SD	M	SD
All participants	29.25	4.901	16.09	3.728
Country: UK	28.85	4.468	15.84	3.485
Country: USA	29.94	5.011	16.21	3.964
Country: Europe	30.60	4.001	15.51	3.944
Country: Canada	29.38	4.372	16.79	3.297
Country: Australia/ New Zealand	27.32	5.209	15.96	3.613
Country: Other	28.06	6.567	17.44	3.464
Age: 18-25	28.94	4.435	16.34	3.693
Age: 26-35	29.05	5.210	15.90	3.655
Age: 36-45	29.81	4.621	16.07	3.705
Age: 46-50	29.62	5.937	16.38	4.477
Age: 51+	29.58	4.073	16.95	4.075
Grade: Junior	29.49	3.783	16.17	3.541
Grade: Middle	29.07	4.948	16.21	3.638
Grade: Senior	29.27	5.174	16.08	3.754

Satisfaction at work

Participants had high job satisfaction, 87% (N 396/454) and high organisational satisfaction, 71% (N 324/454).

Table 3. 23 High/low job satisfaction

Job Satisfaction High/Low	Number	Percent
Low (1-20)	58	12.8
High (21-36)	396	87.2
Total	454	100.0

Table 3. 24 High/low organisational satisfaction

Organisational satisfaction High/low	Number	Percent
Low (1-20)	130	28.6
High (21-36)	324	71.4
Total	454	100.0

Table 3. 25 High/low total satisfaction

Satisfaction High/Low	Number	Percent
Low (0-30)	20	4.4
Medium (31-49)	176	38.8
High (50-72)	258	56.8
Total	454	100.0

Participants in the other parts of the world had the highest mean score for total job satisfaction (M 27.31) but the lowest organisational satisfaction (M 23.06). Participants in Australia/NZ had the lowest mean score for total job satisfaction (M 25.89). Participants in Europe (excluding the UK) had the highest organisational satisfaction (M 24.34). Participants aged 51+ had the highest job satisfaction (M 28.32) and organisational satisfaction (M 25.21). The age range 46-50 had the lowest job satisfaction (M 25.90) and those aged 36-45 had the lowest organisational satisfaction (M 22.97). Participants in senior grades had the highest job satisfaction (M 26.53) and those in junior grades had the highest scores for organisational (M 23.81). Those in middle grades had the lowest job (M 26.32) and women in senior grades had the lowest organisational satisfaction (M 23.43).

Table 3. 26 Mean and standard deviations of the job and organisation satisfaction

Satisfaction	Job Satisfaction		Organisation Satisfaction	
	M	SD	M	SD
All participants	26.46	5.072	23.54	5.787
Country: UK	26.20	5.297	23.82	5.301
Country: USA	26.66	5.123	23.30	6.062
Country: Europe	26.49	4.919	24.34	6.000
Country: Canada	27.04	4.027	23.29	6.259
Country: Australia/ New Zealand	25.89	5.372	23.50	5.812
Country: Other	27.31	3.420	23.06	5.709
Age: 18-25	26.31	4.774	23.88	5.668
Age: 26-35	26.35	5.158	23.46	5.798
Age: 36-45	26.58	5.375	22.97	6.084
Age: 46-50	25.90	4.277	23.86	5.351
Age: 51+	28.32	4.967	25.21	5.391
Grade: Junior	26.44	4.624	23.81	5.205
Grade: Middle	26.32	5.252	23.58	6.363
Grade: Senior	26.53	5.094	23.43	5.694

Gender role identity

Participants had either high or medium masculine gender role identity. Nearly half, 49% had medium and nearly half, 49% had high masculine gender role identity. With regards to feminine gender role identity, 69% had high and 30% medium and 93% had high androgyny.

Table 3. 27 High/low masculine gender role identity

Masculine High/low	Number	Percent
Low (0-30)	11	2.4
Medium (31-49)	223	49.1
High (50-70)	220	48.5
Total	454	100.0

Table 3. 28 High/low feminine gender role identity

Feminine High/low	Number	Percent
Low (0-25)	7	1.5
Medium (26-40)	135	29.7
High (41-63)	312	68.7
Total	454	100.0

Table 3. 29 High/low androgyny gender role identity

Androgyny High/low	Number	Percent
High (0-23)	423	93.2
Medium (24-46)	30	6.6
Low (47-70)	1	.2
Total	454	100.0

Participants in Europe (excluding the UK) had the highest mean score for masculine gender role identity (M 51.54) and those in Australia/NZ had the lowest (M 46.12). Those in Australia/NZ had the highest feminine score (M 45.54) and participants in the other parts of the world had the lowest score for feminine gender role identity (M 43.00). Women in the UK had the highest androgyny score (M 10.65) and those in other parts of the world (M 7.75) the lowest. Participants aged 46-50 had the highest masculine gender role identity (M 52.48) and those aged 18-25 the lowest (M 47.90). Those aged 51+ had the highest feminine gender role identity (M 45.32) and those aged 18-25 the lowest (M 44.27). 18-25 year olds had the highest androgyny (M 10.62) and 46-50 year olds the lowest (M 9.10). Participants in senior grades had the highest masculine (M 49.93) and feminine (M 44.59) gender role identity and those in the middle grades the lowest of both (M 48.01 and 44.20 respectively). Therefore, participants in the middle grades had the highest androgyny (M 10.51) and those in the junior grades the lowest (M 9.96).

Table 3. 30 Mean and standard deviations of the masculine, feminine and androgynous gender role identity

Gender Role Identity	Masculine		Feminine		Androgyny	
	M	SD	M	SD	M	SD
All participants	49.21	9.308	44.55	8.727	10.32	8.096
Country: UK	46.78	9.331	44.89	9.969	10.65	8.595
Country: USA	51.24	8.845	44.31	8.341	10.59	8.007
Country: Europe	51.54	7.785	43.14	6.404	10.40	7.971
Country: Canada	50.63	7.784	45.33	8.318	8.96	7.310
Country: Australia/ New Zealand	46.12	9.956	45.54	7.966	9.91	8.369
Country: Other	49.00	10.826	43.00	10.309	7.75	5.495
Age: 18-25	47.90	9.859	44.27	9.853	10.62	9.145
Age: 26-35	48.74	9.318	44.72	8.641	10.41	7.864
Age: 36-45	50.61	9.045	44.31	8.263	10.21	7.646
Age: 46-50	52.48	7.554	44.90	8.420	9.10	6.920
Age: 51+	49.89	8.445	45.32	6.807	9.32	8.963
Grade: Junior	48.79	9.243	45.36	8.593	9.96	7.666
Grade: Middle	48.01	9.560	44.20	9.638	10.51	8.286
Grade: Senior	49.93	9.254	44.59	8.293	10.33	8.109

Gender identification

82% had low gender identification at work.

Table 3. 31 High/low gender identification

Gender identification	Number	Percent
Low (0-14)	371	81.7
High (15-24)	83	18.3
Total	454	100.0

Participants in Europe (excluding the UK) had the highest gender identification (M 13.06) whilst those in other parts of the world had the lowest (M 11.75). Participants aged 36-45 had the highest gender identification (M 12.68) and 51+ the lowest (M 11.63). Participants in junior grades had the most gender identification (M 12.60) and those in middle grades the lowest (M 12.21).

Table 3. 32 Mean and standard deviations for gender identification

	Gender Identification	
	M	SD
All participants	12.44	2.541
Country: UK	12.16	2.470
Country: USA	12.63	2.537
Country: Europe	13.06	2.869
Country: Canada	12.75	1.622
Country: Australia/ New Zealand	12.16	2.477
Country: Other	11.75	3.531
Age: 18-25	12.33	2.619
Age: 26-35	12.43	2.531
Age: 36-45	12.68	2.482
Age: 46-50	12.62	2.397
Age: 51+	11.63	2.833
Grade: Junior	13.62	1.846
Grade: Middle	11.89	2.703
Grade: Senior	11.55	2.992

Self-efficacy

86% (N 390/454) of participants had high self-efficacy.

Table 3.33 High/low self- efficacy

Female Self efficacy, High/Low	Number	Percent
Low (0-18)	11	2.4
Medium (19-24)	53	11.7
High (24-32)	390	85.9
Total	454	100.0

With regards to country of work, participants working in Europe had the highest self-efficacy (M 30.20) and those in Australia/NZ had the least (M 27.61). With regards to age, participants in the age range 45-50 had the highest self-efficacy (M 29.62) and those aged 51+ had the lowest (M 28.00). Self-efficacy means were similar across the grades; those in the senior grades had a slightly higher mean (M 28.99).

Table 3. 34 Mean and standard deviations for self-efficacy

	Self-Efficacy	
	M	SD
All participants	28.89	4.792
Country: UK	27.89	4.820
Country: USA	29.66	4.803
Country: Europe	30.20	4.129
Country: Canada	29.71	3.368
Country: Australia/ New Zealand	27.61	5.001
Country: Other	28.81	4.943
Age: 18-25	28.54	4.898
Age: 26-35	28.84	4.681
Age: 36-45	29.37	5.049
Age: 46-50	29.62	4.588
Age: 51+	28.00	4.558
Grade: Junior	28.72	4.136
Grade: Middle	28.76	4.814
Grade: Senior	28.99	4.998

Self esteem

The majority of participants had high self esteem, 92% (N 418/454).

Table 3. 35 High/Low self esteem

Self esteem High/Low	Number	Percent
Low	36	7.9
High	418	92.1
Total	454	100.0

When analysing by country of work, Canadian women had slightly higher self esteem (M 33.50) and the UK women the least (M 31.28). Analysis by age revealed that, women aged between 36-45 and 46-50 had the highest mean score (M 32.53) and the

lowest mean score was for the younger women, 18-25 (M 31.94). Analysis by grade found that participants in the junior grades had slightly higher self esteem (M 32.51).

Table 3.36 Mean and standard deviations for self esteem

	Self esteem	
	M	SD
All participants		
Country: UK	31.28	4.767
Country: USA	32.82	4.927
Country: Europe	33.11	5.022
Country: Canada	33.50	4.616
Country: Australia/ New Zealand	31.80	4.867
Country: Other	33.31	4.453
Age: 18-25	31.94	4.905
Age: 26-35	32.38	4.904
Age: 36-45	32.52	4.782
Age: 46-50	32.52	5.335
Age: 51+	32.11	5.130
Grade: Junior	32.51	4.835
Grade: Middle	32.20	4.924
Grade: Senior	32.29	4.921

Work life balance issues

69% (N 311/452) of participants were happy with their work life balance and 73% (N 325/448) viewed work life balance as part of their workplace culture. Despite this, 80% (N 359/447) felt there was a long hour's culture in their organisation. The work life balance statement 'work life balance is part of my workplace culture' had the highest mean score (M 4.14).

Table 3.37 Work life balance responses*

	% (n) Very Strongly Disagree	% (n) Strongly Disagree	% (n) Disagree	% (n) Agree	% (n) Strongly Agree	% (n) Very Strongly Agree	M	SD
I am happy with my work life balance	2.9 (13)	5.5 (25)	22.8 (103)	40.9 (185)	19.9 (90)	8.0 (36)	3.87	1.098
The number of hours I work does not affect my personal health	5.1 (23)	8.4 (38)	29.6 (134)	32.7 (148)	14.4 (65)	9.7 (44)	3.69	1.244
The number of hours I work affects my personal relationships	6.4 (29)	12.6 (57)	32.5 (147)	33.4 (151)	10.2 (46)	4.9 (22)	3.47	1.165
Work life balance is bad for productivity	28.4 (128)	22.2 (100)	34.4 (155)	9.3 (42)	4.0 (18)	1.8 (8)	2.44	1.202
Awareness of work life balance policies needs to be improved	5.1 (23)	8.0 (36)	26.2 (118)	31.6 (142)	19.1 (86)	10.0 (45)	3.81	1.279
Work life balance is part of my workplace culture	2.9 (13)	4.7 (21)	19.9 (89)	37.1 (166)	17.4 (78)	18.1 (81)	4.17	1.202
My colleagues approve when I need to leave work because of outside commitments	3.1 (14)	8.5 (38)	23.8 (106)	46.0 (205)	12.1 (54)	6.5 (29)	3.71	1.105
There is a long hours culture within my organisation	.9 (4)	5.6 (25)	13.2 (59)	51.2 (29)	19.2 (89)	9.8 (44)	4.07	1.036

*NB: some missing values

Analysis of work life balance issues by country of work found participants in the UK and the USA had the highest means for there being a long hour's culture (M 4.11). However, participants in the UK were also happiest with their work life balance (M 3.95).

Table 3.38 Mean and standard deviation scores for all work life balance statements by country*

Work life balance by country	UK		USA		Europe		Canada		Australia/NZ		Other	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
I am happy with my work life balance	3.95	1.064	3.88	1.117	3.86	1.061	3.83	1.049	3.79	1.124	3.63	1.258
The number of hours I work does not affect my personal health	3.72	1.229	3.74	1.229	3.71	1.296	3.46	1.285	3.66	1.283	3.38	1.310
The number of hours I work affects my personal relationships	3.45	1.108	3.51	1.235	3.29	1.202	3.46	1.141	3.45	1.174	3.63	.806
Work life balance is bad for productivity	2.31	1.119	2.51	1.264	2.83	1.150	2.29	1.042	2.48	1.293	2.06	.998
Awareness of work life balance policies needs to be improved	3.62	1.273	3.89	1.304	3.91	1.380	3.83	1.129	3.93	1.219	3.75	1.238
Work life balance is part of my workplace culture	4.02	1.217	4.23	1.165	4.03	1.272	4.29	1.268	4.29	1.155	4.44	1.459
My colleagues approve when I need to leave work because of outside commitments	3.87	1.039	3.65	1.154	3.46	1.120	3.79	.833	3.70	1.174	3.69	1.078
There is a long hours culture within my organization	4.11	1.101	4.11	1.018	3.94	.968	3.92	.974	4.05	1.052	3.94	.929

*NB: some missing values

With regards to age, participants in the age range 51+ had the highest mean score for there being a long hour's culture within their organisation (M 4.32). Women aged 36-45 were happiest with their work life balance (M 3.94) and those least happy were those aged 18-25 (M 3.67).

Table 3.39 Mean and standard deviation scores for all work life balance statements by age *

Work life balance by age	18-25		26-35		36-45		45-50		51+	
	M	SD	M	SD	M	SD	M	SD	M	SD
I am happy with my work life balance	3.67	1.040	3.93	1.145	3.94	1.047	3.90	.889	3.84	1.302
The number of hours I work does not affect my personal health	3.49	1.297	3.83	1.244	3.60	1.217	3.38	.740	3.89	1.410
The number of hours I work affects my personal relationships	3.67	1.079	3.37	1.204	3.39	1.140	3.62	1.024	3.84	1.344
Work life balance is bad for productivity	2.32	1.096	2.38	1.182	2.67	1.297	2.24	.889	2.84	1.537
Awareness of work life balance policies needs to be improved	3.86	1.204	3.70	1.300	4.08	1.317	3.81	1.078	3.42	1.305
Work life balance is part of my workplace culture	4.14	1.195	4.10	1.213	4.29	1.186	4.33	.966	4.32	1.493
My colleagues approve when I need to leave work because of outside commitments	3.61	1.048	3.80	1.124	3.62	1.066	3.48	1.078	3.89	1.410
There is a long hours culture within my organization	4.07	1.023	4.14	1.032	3.93	1.051	3.81	.750	4.32	1.293

*NB: some missing values

Participants in all grades had a very similar mean score for their organisation having a long hour's culture, with those in a middle grade having the highest (M 4.09). Women in the senior grades were happiest with their work life balance (M 3.90).

Table 3.40 Mean and standard deviation scores for all work life balance statements by grade*

Work life balance by grade	Junior		Middle		Senior	
	M	SD	M	SD	M	SD
I am happy with my work life balance	3.79	1.034	3.84	1.087	3.90	1.121
The number of hours I work does not affect my personal health	3.69	1.252	3.67	1.291	3.71	1.224
The number of hours I work affects my personal relationships	3.46	1.125	3.58	1.178	3.41	1.168
Work life balance is bad for productivity	2.22	1.103	2.42	1.192	2.51	1.212
Awareness of work life balance policies needs to be improved	3.63	1.192	3.81	1.338	3.87	1.263
Work life balance is part of my workplace culture	4.06	1.221	4.12	1.173	4.23	1.202
My colleagues approve when I need to leave work because of outside commitments	3.65	1.064	3.75	1.148	3.70	1.074
There is a long hours culture within my organization	4.07	.909	4.09	1.120	4.06	1.020

*NB: some missing values

Career progression and promotion

In general, participants had a positive attitude towards their career progression and promotion.

Table 3. 41 Career progression and promotion responses*

	% (n) Very Strongly Disagree	% (n) Strongly Disagree	% (n) Disagree	% (n) Agree	% (n) Strongly Agree	% (n) Very Strongly Agree	M	SD
Promotion is important to me	2.0 (9)	2.7 (12)	10.4 (46)	35.7 (158)	29.9 (132)	19.2 (85)	4.46	1.119
I intend to climb the career ladder and I am prepared to make personal sacrifices in order to do so	6.6 (29)	7.7 (34)	27.9 (123)	32.7 (144)	15.9 (70)	9.3 (41)	3.76	1.302
I am progressing in my career	1.6 (7)	1.8 (8)	13.8 (61)	46.5 (205)	22.0 (97)	14.3 (63)	4.32	1.049
There are not enough opportunities for me to progress in my career	6.3 (28)	10.0 (44)	38.7 (171)	24.4 (108)	13.6 (60)	7.0 (31)	3.51	1.226
To be recognised in my field is important to me	.5 (2)	1.1 (5)	7.2 (32)	37.0 (164)	34.3 (152)	19.9 (88)	4.66	.954

*NB: some missing values

Participants in the UK and the USA had equally the highest mean score for promotion being important to them (M 4.51) and those in Canada the least (M 4.21). Women in the UK had the lowest mean score for them feeling they are progressing in their careers (M 4.18) and those in Canada had the highest (M 4.71).

Table 3. 42 Mean and standard deviations of the career progression and promotion statements by country*

Career progression by country	UK		USA		Europe		Canada		Australia/New Zealand		Other	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Promotion is important to me	4.51	1.002	4.51	1.177	4.46	1.067	4.21	1.062	4.32	1.266	4.44	1.094
I intend to climb the career ladder and I am prepared to make personal sacrifices in order to do so	3.76	1.372	3.80	1.292	3.80	1.232	3.67	1.204	3.71	1.303	3.63	1.310
I am progressing in my career	4.18	1.089	4.37	1.064	4.49	1.121	4.71	.955	4.18	.936	4.44	.727
There are not enough opportunities for me to progress in my career	3.63	1.160	3.44	1.284	3.63	1.262	3.58	1.316	3.50	1.112	3.13	1.310
To be recognised in my field is important to me	4.63	.898	4.60	.989	4.74	.950	4.83	.868	4.77	1.062	4.81	.750

*NB: some missing values

Participants aged 51+ had the highest mean score for promotion being important to them (M 4.53) and those aged 46-50 the least (M 4.29). Those aged 18-25 had the lowest mean score for them feeling they are progressing in their careers (M 4.20) whilst those aged 36-45 (M 4.45) had the most.

Table 3. 43 Mean and standard deviations of the career progression and promotion statements by age*

Career progression by age	18-25		26-35		36-45		46-50		51+	
	M	SD	M	SD	M	SD	M	SD	M	SD
Promotion is important to me	4.42	1.051	4.47	1.151	4.52	1.163	4.29	1.189	4.53	.841
I intend to climb the career ladder and I am prepared to make personal sacrifices in order to do so	3.80	1.325	3.69	1.313	3.90	1.300	3.90	1.221	3.63	1.165
I am progressing in my career	4.20	1.010	4.31	1.088	4.45	1.081	4.38	.973	4.32	.671
There are not enough opportunities for me to progress in my career	3.46	1.146	3.50	1.235	3.60	1.258	3.33	1.426	3.53	1.219
To be recognised in my field is important to me	4.60	.968	4.55	.983	4.88	.886	4.76	.995	4.89	.658

*NB: some missing values

Participants in the junior grades felt the most strongly that promotion was important to them (M 4.56). Those in senior grades felt a lot stronger to the importance of being recognised in their field (M 4.73) and that they were progressing in their career the most strongly (M 4.39).

Table 3. 44 Mean and standard deviations of the career progression and promotion statements by grade*

Career progression by grade	Junior		Middle		Senior	
	M	SD	M	SD	M	SD
Promotion is important to me	4.56	1.060	4.36	1.159	4.49	1.122
I intend to climb the career ladder and I am prepared to make personal sacrifices in order to do so	3.76	1.369	3.81	1.258	3.75	1.318
I am progressing in my career	4.14	1.039	4.28	1.081	4.39	1.038
There are not enough opportunities for me to progress in my career	3.43	.917	3.44	1.343	3.57	1.240
To be recognised in my field is important to me	4.65	.875	4.55	1.067	4.73	.906

*NB: some missing values

Barriers to career progression

72% agreed to some extent that the glass ceiling exists. 59% agreed to some extent that equal opportunities legislation means there are no barriers to women in employment. The majority, 94% agreed to some extent that some careers are more female friendly than others. Participants tended to disagree (72%) to some extent with the statement that there are no covert barriers to women's achievement. Only

24% (N 108/454) agreed to some extent with the statement that women are well represented in their profession. Whilst 53% (N 241/454) disagreed to some degree with the statement that women are well represented in their organisation. The career barrier statement 'some careers are more female friendly than others' had the highest mean score is (M 4.79).

Table 3. 45 Barriers to career progression responses*

	% (N) Very dissatisfied	% (N) Quite dissatisfied	% (N) Dissatisfied	% (N) Satisfied	% (N) Quite satisfied	% (N) Very satisfied	M	SD
I think the glass ceiling exists	19 (4.3)	22 (5.0)	83 (18.9)	163 (37.1)	87 (19.8)	65 (14.8)	4.07	1.239
Equal Opportunities legislation means there are no barriers to women in employment	57 (12.8)	74 (16.7)	138 (31.1)	85 (19.1)	37 (8.3)	53 (11.9)	3.29	1.472
Some careers are more female friendly than others	5 (1.1)	5 (1.1)	18 (4.1)	140 (31.5)	150 (33.8)	126 (28.4)	4.79	.999
There are no covert barriers to women's achievement	81 (18.3)	83 (18.7)	153 (34.5)	84 (19.0)	28 (6.3)	14 (3.2)	2.87	1.27
Women are well represented in my profession	108 (24.5)	91 (20.6)	136 (30.8)	64 (14.5)	24 (5.4)	18 (4.1)	2.69	1.341
Women are well represented in my organisation	58 (13.2)	62 (14.1)	110 (24.9)	123 (27.9)	54 (12.2)	34 (7.7)	3.34	1.406

*NB: some missing values

Participants in the USA felt the most strongly that the glass ceiling exists (M 4.30) whilst those in Canada the least (M 3.67). Those in other parts of the world agreed the most that women are well represented in their profession (M 3.94) whereas women in Canada disagreed the strongest (M 2.58).

Table 3. 46 Mean and standard deviations for the career barrier statements by country*

Career barriers by country	UK		USA		Europe		Canada		Australia/Ne w Zealand		Other	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
I think the glass ceiling exists	3.84	1.054	4.30	1.336	3.97	1.424	3.67	1.404	4.05	1.069	4.06	.998
Equal Opportunities legislation means there are no barriers to women in employment	3.19	1.125	3.16	1.575	3.29	1.363	2.96	1.398	3.82	1.674	4.38	1.746
Some careers are more female friendly than others	4.57	1.037	4.93	1.052	4.80	.933	4.79	.833	4.77	.786	5.19	.834
There are no covert barriers to women's achievement	3.16	1.145	2.55	1.293	2.97	1.175	3.08	1.213	2.86	1.257	3.63	1.500
Women are well represented in my profession	2.70	1.220	2.61	1.419	2.60	1.311	2.58	1.412	2.71	1.303	3.94	.929
Women are well represented in my organisation	3.34	1.214	3.42	1.537	3.14	1.417	3.33	1.579	3.13	1.308	3.81	1.276

*NB: some missing values

Participants aged 46-50 felt the most strongly that the glass ceiling exists (M 4.52) and those aged 51+ the least (M 3.58). 18-25 year olds disagreed the strongest with the statement, women are well represented in my profession (M 2.52).

Table 3. 47 Mean and standard deviations for the career barrier statements by age*

Career barriers by age	18-25		26-35		36-45		46-50		51+	
	M	SD	M	SD	M	SD	M	SD	M	SD
I think the glass ceiling exists	4.09	1.238	4.11	1.231	3.95	1.299	4.52	1.030	3.58	1.121
Equal Opportunities legislation means there are no barriers to women in employment	3.24	1.371	3.30	1.496	3.41	1.443	2.90	1.729	3.37	1.674
Some careers are more female friendly than others	4.84	1.167	4.83	.918	4.65	1.014	5.00	1.049	4.74	.806
There are no covert barriers to women's achievement	2.89	1.194	2.89	1.313	2.90	1.323	2.33	1.065	2.95	1.079
Women are well represented in my profession	2.52	1.128	2.70	1.432	2.79	1.329	2.90	1.338	2.68	1.416
Women are well represented in my organisation	3.18	1.232	3.34	1.460	3.57	1.366	3.00	1.581	3.21	1.584

*NB: some missing values

Participants in senior grades feel the glass ceiling exists the strongest (M 4.12). Those in the junior grades feel the strongest that women are well represented in their organisation (M 3.39) and their profession (M 2.74).

Table 3. 48 Mean and standard deviations for the career barrier statements by grade*

Career barriers by grade	Junior		Middle		Senior	
	M	SD	M	SD	M	SD
I think the glass ceiling exists	4.04	1.144	3.97	1.351	4.12	1.212
Equal Opportunities legislation means there are no barriers to women in employment	3.28	1.335	3.41	1.535	3.23	1.470
Some careers are more female friendly than others	4.89	.943	4.76	1.089	4.78	.970
There are no covert barriers to women's achievement	2.93	1.293	2.96	1.365	2.80	1.212
Women are well represented in my profession	2.74	1.321	2.62	1.403	2.71	1.327
Women are well represented in my organisation	3.39	1.251	3.09	1.466	3.44	1.419

*NB: some missing values

Generational differences

The majority (69%) of participants are in the generation X cohort, 22% generation Y cohort and only 9% of the participants are from the boomer generation.

Table 3. 49 The generations*

Generation	Age	Number	Percent
Y	18-25	99	21.9
X	26-35	213	47.0
X	36-45	101	22.3
Boomers	46-50	21	4.6
Boomers	51+	19	4.2
	Total	453	100.0

NB*= Some missing values

Generation Xers have the highest mean scores for self esteem, self-efficacy and gender identity. Boomers had the highest mean scores for job fit, organisational fit, intrinsic motivation, job satisfaction, organisational satisfaction, masculine gender role identity, feminine gender role identity and the most androgynous gender role identity.

Table 3. 50 Generational means*

	Generation Yers	Generation Xers	Boomers
Self Esteem	31.94	32.43	32.32
WLB -1: I am happy with my work life balance	3.67	3.93	3.88
WLB -2: The number of hours I work does not affect my personal health	3.49	3.76	3.63
WLB -3: The number of hours I work affects my personal relationships	3.67	3.37	3.73
WLB -4: Work life balance is bad for productivity	2.32	2.47	2.53
WLB -5: Awareness of work life balance policies needs to be improved	3.86	3.82	3.63
WLB -6: Work life balance is part of my workplace culture	4.14	4.16	4.33
WLB -7: My colleagues approve when I need to leave work because of outside commitments	3.61	3.75	3.68
WLB -8: There is a long hours culture within my organisation	4.07	4.07	4.05
Self-efficacy	28.54	29.01	28.85
Job fit	28.94	29.30	29.60
Organisational fit	16.34	15.95	16.65
Intrinsic motivation	45.09	45.45	46.18
Extrinsic motivation	39.00	38.59	38.00
Career progression-1: Promotion is important to me	4.42	4.49	4.40
Career progression-2: I intend to climb the career ladder and I am prepared to make personal sacrifices in order to do so	3.80	3.76	3.78
Career progression-3: I am progressing in my career	4.20	4.35	4.35
Career progression-4: There are not enough opportunities for me to progress in my career	3.46	3.54	3.43
Career progression-5: To be recognised in my field is important to me	4.60	4.66	4.83
Job satisfaction	26.31	26.43	27.05
Organisational satisfaction	23.88	23.30	24.50
Total satisfaction	50.19	49.73	51.55
Masculine gender role identity	47.90	49.34	51.25
Feminine gender role identity	44.27	44.59	45.10
Androgyny gender role identity	10.62	10.34	9.20
Total gender identity	12.33	12.51	12.15
Barriers -1: I think the glass ceiling exists	4.09	4.06	4.08
Barriers -2: Equal Opportunities legislation means there are no barriers to women in employment	3.24	3.33	3.13
Barriers -3: Some careers are more female friendly than others	4.84	4.77	4.88
Barriers -4: There are no covert barriers to women's achievement	2.89	2.89	2.63
Barriers -5: Women are well represented in my profession	2.52	2.73	2.80
Barriers -6: Women are well represented in my organisation	3.18	3.42	3.10

NB*= Some missing values

3.2 Correlations

Co relational analysis was undertaken to determine the relationships between the variables. It was found that:

- Self esteem was significantly correlated with all but extrinsic motivation, gendered identification and androgyny gender role identity.
- Self-efficacy was significantly correlated with all but gendered identification and feminine and androgynous gender role identity.
- Job fit was significantly correlated with all but extrinsic motivation, gendered identification and feminine and androgyny gender role identity.
- Organisational fit was significantly correlated with all but extrinsic motivation, gendered identification and androgyny gender role identity.
- Intrinsic motivation was significantly correlated with all but gendered identification and androgyny gender role identity.
- Extrinsic motivation was significantly correlated with self-efficacy, intrinsic motivation, feminine gender role identity and gendered identification.
- Job satisfaction was significantly correlated with all but extrinsic motivation, gendered identification and androgyny gender role identity.
- Organisational satisfaction was significantly correlated with all but extrinsic motivation, gendered identification and androgyny gender role identity.
- Masculine gender role identity was significantly correlated with all but extrinsic motivation and feminine gender role identity.
- Feminine gender role identity was significantly correlated to all but self esteem, self-efficacy, job fit, and androgyny.
- Androgyny gender role identity was significantly correlated with masculine and feminine gender role identity

Table 3. 51 Correlations between variables

		Self esteem	Self-Efficacy	Job Fit	Organisation Fit	Intrinsic motivation	Extrinsic motivation	Job satisfaction	Organisation satisfaction	Masculine gender role identity	Feminine gender role identity	Androgyny gender identity
Self-Efficacy	Pearson	.594										
	Correlation	(**)										
Job fit	Pearson	.455	.672									
	Correlation	(**)	(**)									
Organisation fit	Pearson	.279	.340	.435								
	Correlation	(**)	(**)	(**)								
Intrinsic motivation	Pearson	.233	.394	.313	.153							
	Correlation	(**)	(**)	(**)	(**)							
Extrinsic motivation	Pearson	-.094	.067	-.232								
	Correlation	(*)		(**)								
Job satisfaction	Pearson	.351	.392	.398	.508	.216	-					
	Correlation	(**)	(**)	(**)	(**)	(**)	.018					
Organisation satisfaction	Pearson	.209	.265	.237	.552	.110	-.666					
	Correlation	(**)	(**)	(**)	(**)	(*)	.044	(**)				
Masculine gender role identity	Pearson	.390	.479	.407	.135	.396	.209	.104				
	Correlation	(**)	(**)	(**)	(**)	(**)	.017	(**)	(*)			
Feminine gender role identity	Pearson	-.020	.026	.123	.111	.108	.122	.146	.075			
	Correlation			(**)	(*)	(*)	(**)	(**)				
Androgyny gender role identity	Pearson	.017	.033	.104	.002	.068	.058	.017	-.131	-.357		
	Correlation			(*)					(**)	(**)		
Gender identification	Pearson	.118	.077	.022	-.001	.076	.097	.051	.070	.096	.097	.022
	Correlation	(*)				(*)				(*)	(*)	

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

3.3 Group comparisons

Parametric analysis was conducted between groups to identify significant differences.

3.4 T tests analysis

A number of independent t tests were conducted for the participants in the study against all the studies psychological measures. The main factor (IV) of analysis varied and each will be discussed in turn.

T test: Area of work - developmental or non-developmental

T tests were conducted between area of work of the participants, specifically the difference between those in a developmental i.e. artists, coders and non-developmental area of work, i.e. HR, admin and all the measures in the study. There were no significant results for any of the self esteem, person-environment fit, career progression, work life balance or gender identification statements. Significant results,

shown below, were found with one self-efficacy, two motivational and intrinsic motivation, one work satisfaction, one gender role identity and androgyny and one career barriers statement.

Table 3. 52 Significant t test results for participants area of work and the measures in the study

Statement	t	df	P value	Devel Mean	Non-dev mean
Self-efficacy statement 2, when I am confronted with a problem in my job, I can usually find several solutions	2.097	423	<0.05	5.02	4.80
Intrinsic motivation	2.143	423	<0.05	45.69	44.38
Motivation statement 23, I enjoy doing work that is so absorbing that I forget about everything else, equal variance assumed	2.829	423	<0.05	3.07	2.79
Motivation statement 27, it is important for me to have an outlet for self-expression	2.829	423	<0.001	3.20	2.91
Satisfaction at work statement 12, the degree to which you feel extended in your job	2.829	423	<0.001	4.21	3.90
Androgyny	2.693	233.280	<0.01	10.73	8.60
Gender role identity statement, willing to take a stand	2.546	423	<0.05	5.50	5.15
Career barriers statement 5, women are well represented in my profession	-4.072	423	<0.001	2.54	3.15

T test: Children - participants with or without children

A number of independent t tests were conducted, the main factor (IV) of analysis was children, specifically the difference between all participants with and without children against all the psychological measures within the study. There were no significant results for any of the self esteem, work life balance, career barriers, work satisfaction or gender identification statements. Significant results, shown below, were found with one self-efficacy, two person-environment fit, four motivational, one career progression and two gender role identity statements.

Table 3. 53 Significant t test results for participants with or without children and the measures in the study

Statement	t	df	P value	With mean	With Out mean
Self-efficacy statement 6, I feel prepared for most of the demands in my job	2.339	174.008	<0.05	4.93	4.67
Person-environment fit statement 1, my abilities fit the demands of the job	2.141	184.491	<0.05	6.06	5.82
Person-environment fit statement 5, I meet the goals I set for myself in my job	2.187	166.515	<0.05	6.02	5.74
Motivation statement 1, I enjoy tackling problems that are completely new to me	2.277	451	<0.05	3.15	2.96
Motivation statement 7, I prefer to figure things out for myself	2.478	158.147	<0.05	2.88	2.69
Motivation statement 11, curiosity is the driving force behind much of what I do	2.232	159.512	<0.05	2.97	2.77
Motivation statement 26, I enjoy trying to solve complex problems	2.340	451	<0.05	3.24	3.03
Career progression statement 2, I intend to climb the ladder and I am prepared to make personal sacrifices in order to do so	1.973	451	<0.05	4.00	3.71
Gender role identity statement, independent	3.120	176.160	<0.01	5.91	5.54
Gender role identity statement, willing to take a stand	2.869	175.417	<0.01	5.71	5.34

T test: Children – participants in a developmental area with/without children

T tests between participants with and without children working in a developmental area only against all the psychological measures in the study. There were no significant results for any of the self esteem, work life balance, person-environment fit, career barriers or gender identification statements. Significant results, shown below, were found with one self-efficacy, three motivational, one career progression, one satisfaction at work and one gender role identity statements.

Table 3. 54 Significant t test results for participants in a developmental area of work with or without children and the measures in the study

Statement	t	df	P value	With mean	With Out mean
Self-efficacy statement 6, I feel prepared for most of the demands in my job	2.218	130.019	<0.05	4.99	4.71
Motivation statement 3, the more difficult the problem, the more I enjoy trying to solve it	2.232	159.512	<0.05	2.97	2.77
Motivation statement 16, I seldom think about salary or promotions	2.264	317	<0.05	2.23	1.95
Motivation statement 26, I enjoy trying to solve complex problems	2.217	317	<0.05	3.28	3.05
Career progression statement 2, I intend to climb the ladder and I am prepared to make personal sacrifices in order to do so	2.376	317	<0.05	4.08	3.66
Satisfaction at work statement 5, the way that changes and innovations are implemented	2.007	317	<0.05	4.11	3.78
Gender role identity statement, sympathetic	-2.205	317	<0.05	4.94	5.32

T test: Country of work - participants working in the UK and USA

The main factor (IV) was country of work, specifically the difference between participants working in the UK and USA against the psychological measures in the study. There were no significant results for any of the work life balance, satisfaction at work or career progression statements. Significant results, shown below, were found with, seven self esteem and total self esteem, four self-efficacy and total self-efficacy, one person-environment fit and total job fit, eleven motivational and intrinsic motivation, three career barriers statements, and seven gender role identity characteristics and masculine gender role identity.

Table 3. 55 Significant t test results for participants in the UK and the USA and the measures in the study

Statement	t	df	P value	UK mean	USA mean
Self esteem statement 1, on the whole I am satisfied with myself	-2.074	294.222	<0.05	3.17	3.31
Self esteem statement 2, at times I think I am no good at all	2.081	320	<0.05	2.35	2.14
Self esteem statement 3, I feel I have a number of good qualities	-3.167	320	<0.05	3.41	3.60
Self esteem statement 4, I am able to do things as well as most people	-2.001	320	<0.05	3.35	3.49
Self esteem statement 7, I feel that I am a person of worth, at least on an equal plane with others	-2.934	302.442	<0.05	3.25	3.45
Self esteem statement 8, I wish I could have more respect for myself	2.282	320	<0.05	2.24	2.01
Self esteem statement 10, I take a positive attitude towards myself	-2.759	295.507	<0.05	3.07	3.27
Total self esteem	-2.817	320	<0.05	31.28	32.82
Total self-efficacy	-3.258	320	<0.01	27.89	29.66
Self-efficacy statement 1, I can remain calm when facing difficulties in my job because I can rely on my abilities	-2.770	320	<0.05	4.54	4.90
Self-efficacy statement 2, when I am confronted with a problem in my job, I can usually find several solutions	-3.131	320	<0.01	4.74	5.10
Self-efficacy statement 5, I meet the goals I set myself in my job	-1.993	320	<0.05	4.65	4.88
Self-efficacy statement 6, I feel prepared for most of the demands in my job	-3.127	320	<0.05	4.54	4.91
Person-environment fit statement 1, my abilities fit the demands of this job	-2.855	320	<0.05	5.71	6.06
Total Job fit	-2.003	320	<0.05	28.85	29.94
Motivation statement 1, I am not that concerned about what other people think of my work	-2.324	320	<0.05	1.60	1.81
Motivation statement 3, the more difficult the problem, the more I enjoy trying to solve it	-2.875	270.424	<0.01	2.72	2.97
Motivation statement 4, I am keenly aware of the income goals I have for myself	-5.523	262.371	<0.01	2.63	3.16
Motivation statement 10, curiosity is the driving force behind much of what I do	-3.591	320	<0.001	2.89	3.20
Motivation statement 11, I am less concerned with what work I do than what I get from it	-3.111	320	<0.01	2.62	2.90
Motivation statement 17, I am more comfortable when I set my own goals	-3.816	320	<0.001	2.40	2.71
Motivation statement 18, I believe that there is no point in doing a good job if nobody else knows about it	2.724	320	<0.01	1.80	1.56
Motivation statement 21, I prefer working on projects with clearly specified procedures	2.306	320	<0.05	2.66	2.46
Motivation statement 26, I enjoy trying to solve complex problems	-2.349	320	<0.05	2.96	3.17
Motivation statement 27, it's important for me to have an outlet of self-expression	-2.007	320	<0.05	3.04	3.22
Motivation statement 30, what matters most to me is enjoying what I do	-2.089	320	<0.05	3.30	3.46
Intrinsic motivation	-3.441	320	<0.001	44.17	46.30
Gender role identity statement, independent	-3.060	320	<0.01	5.37	5.76
Gender role identity statement, strong personality	-2.856	320	<0.05	5.15	5.58
Gender role identity statement, leadership abilities	-5.089	238.053	<0.001	5.04	5.78
Gender role identity statement, willing to take risks	-3.228	320	<0.001	4.94	5.39
Gender role identity statement, dominant	-2.849	320	<0.05	3.89	4.37
Gender role identity statement, aggressive	-4.789	320	<0.001	3.13	3.95
Gender role identity statement, willing to take a stand	-3.910	320	<0.001	5.16	5.70
Masculine gender role identity	-4.362	320	<0.001	46.78	51.24
Career barriers statement 1, I think the glass ceiling exists	-3.449	316.674	<0.01	3.84	4.30
Career barriers statement 3, some careers are more female friendly than others	-3.039	289.139	<0.01	4.57	4.93
Career barriers statement 4, there are no covert barriers to women's achievement	4.510	305.256	<0.001	3.16	2.55

T test: Country of work – participants in a developmental area of work working in the UK and USA

T tests between participants in a developmental area working in the UK and USA against the psychological measures in the study. There were no significant results for any of the work life balance, satisfaction at work or career progression statements. Significant results, shown below, were found with, one self esteem, four self-efficacy and total self-efficacy, one person-environment fit, eight motivational, three career barriers, one gender identification and eight gender role identity statements.

Table 3. 56 Significant t test results for participants in a developmental role in the UK and the USA and the measures in the study

Statement	t	df	P value	UK mean	USA mean
Self esteem statement 2, at times I think I am no good at all	2.202	231	<0.05	2.39	2.12
Total self-efficacy	-2.729	231	<0.05	28.16	29.90
Self-efficacy statement 1, I can remain calm when facing difficulties in my Job because I can rely on my abilities	-2.894	231	<0.01	4.57	4.95
Self-efficacy statement 2, when I am confronted with a problem in my job, I can usually find several solutions	-3.131	231	<0.01	4.82	5.19
Self-efficacy statement 3, whatever comes my way in my job, I can usually handle it	-2.472	231	<0.05	4.80	5.09
Self-efficacy statement 6, I feel prepared for most of the demands in my job	-2.372	231	<0.05	4.63	4.95
Person-environment fit statement 1, my abilities fit the demands of this job	-2.815	231	<0.01	5.72	6.12
Intrinsic motivation	-2.799	231	<0.01	44.53	46.47
Motivation statement 4, I am keenly aware of the income goals I have for myself	-4.672	231	<0.01	2.70	3.22
Motivation statement 10, curiosity is the driving force behind much of what I do	-2.857	231	<0.01	2.93	3.21
Motivation statement 11, I am less concerned with what work I do than what I get from it	-2.742	231	<0.01	2.60	2.90
Motivation statement 17, I am more comfortable when I set my own goals	-2.837	231	<0.01	2.40	2.67
Motivation statement 21, I prefer working on projects with clearly specified procedures	-2.712	231	<0.01	2.76	2.48
Motivation statement 26, I enjoy trying to solve complex problems	-2.203	231	<0.05	2.98	3.20
Motivation statement 27, it's important for me to have an outlet of self-expression	-2.610	231	<0.05	3.05	3.32
Gender role identity statement, independent	-2.784	231	<0.01	5.32	5.74
Gender role identity statement, strong personality	-2.080	231	<0.05	5.13	5.51
Gender role identity statement, leadership abilities	-4.348	231	<0.001	5.04	5.77
Gender role identity statement, willing to take risks	-2.309	231	<0.05	5.00	5.38
Gender role identity statement, dominant	-2.368	231	<0.05	3.94	4.42
Gender role identity statement, aggressive	-4.007	231	<0.001	3.18	4.00
Gender role identity statement, willing to take a stand	-2.886	231	<0.01	5.28	5.77
Masculine gender role identity	-3.366	231	<0.01	47.24	51.42
Total gender identification	-2.804	231	<0.01	11.88	12.80
Career barriers statement 1, I think the glass ceiling exists	-3.120	229.87 1	<0.01	3.71	4.21
Career barriers statement 3, some careers are more female friendly than others	-2.505	229.87 1	<0.05	4.61	4.96
Career barriers statement 4, there are no covert barriers to women's achievement	-4.461	228.62 4	<0.001	3.30	2.62

T test: Game play - participants that did and did not play computer games for leisure

The main factor (IV) was playing computer games in their leisure time, whether the participants played or did not play computer games in their leisure time and the psychological measures in the study. There were no significant results for any of the self esteem, self-efficacy, work life balance, satisfaction at work, person-environment fit, gender identification, motivational statements or gender role identity characteristics. Significant results, shown below, were found with two career progression and two career barriers.

Table 3. 57 Significant t test results for participants who did and did not play computer games for leisure and the measures in the study

Statement	t	df	P value	Played	Did not
Career progression statement 1, promotion is important to me	-2.017	450	<0.05	4.42	4.69
Career progression statement 2, I intend to climb the career ladder and I am prepared to make personal sacrifices in order to do so	-3.088	136.318	<0.01	3.69	4.12
Career barriers statement 4, there are no covert barriers to women's achievement	-2.026	450	<0.05	2.81	3.12
Career barriers statement 5, women are well represented in my profession	-2.198	450	<0.01	2.62	2.98

T test: Relocation - participants that would and would not relocate

The main factor (IV) was relocation, there were two significant t tests for all participants with regards to whether the participants would or wouldn't relocate for a promotion and the psychological measures in the study. Total self-efficacy and intrinsic motivation were significant. There were no significant results for the remaining self-efficacy or motivation statements, for any self esteem, person-environment fit, satisfaction at work, gender role identity, career progression, career barriers, gender identification or work life balance statements or totals.

Table 3. 58 Significant t test results for participants who would and would not relocate for a promotion and the measures in the study

Statement	t	df	P value	Relocate	Not
Total self-efficacy	-2.139	344	<0.05	28.55	29.69
Intrinsic motivation	-2.071	344	<0.05	44.91	46.19

T test: Hours worked - 45 and under/ 46 plus hours per week

There was only one significant t test result between participants who worked 45 hours and under or 46 plus hours per week with regards to the psychological

measures in the study. Only one of the career progression statements was significant. Total self-efficacy, total self esteem, satisfaction at work, person-environment fit, gender role identity, gender identification, any of the career progression, work life balance or career barriers statements and the motivational statements were all not significant.

Table 3. 59 Significant t test results for participants who work 45 and 46 plus hours per week and the measures in the study

Statement	t	df	P value	<45hrs	>46hrs
Career progression statement 1, promotion is important to me	-3.085	445	0.01	4.35	4.70

T test: Intention – plan to stay/ not stay in the games industry in the next 5 years

There were nine significant t test results between participants who intended to stay within the games industry in the next five years and those that did not plan to stay with regards to the psychological measures in the study. One work life balance statements, job fit and organisational fit, two career progression statements, job satisfaction, organisational satisfaction, total satisfaction and androgynous gender role identity were all significant, shown below. There were no significant results for any of the self esteem, self-efficacy, gender identification career barriers or motivation statements.

Table 3. 60 Significant t test results for participants intending and not intending to stay in the games industry in the next 5 years and the measures in the study

Statement	t	df	P value	Stay mean	Not mean
Work life balance statement 6, work life balance is part of my work culture	-1.994	300	<0.05	4.65	4.14
Job fit	2.127	300	<0.05	29.77	27.52
Organisation fit	3.274	300	<0.05	16.46	13.91
Career progression statement 2, I intend to climb the career ladder and I am prepared to make personal sacrifices in order to do so	2.085	300	<0.05	3.84	3.26
Career progression statement 3, I am progressing in my career	2.263	300	<0.05	4.43	3.96
Job satisfaction	2.464	300	<0.05	26.88	24.26
Organisational satisfaction	2.162	300	<0.05	23.72	21.04
Total satisfaction	2.510	300	<0.05	50.59	45.30
Androgynous gender role identity	2.368	300	<0.05	11.03	6.83

T test: Employment status - full or part-time working

There was only one significant t test result between participants who worked full time and those that worked part-time and all the psychological measures within the study.

The only significant result was one of the career progression statements. None of the self-efficacy, self esteem, work satisfaction, person-environment fit, gender role identity, gender identification, any of the work life balance, career barriers or motivation statements were significant.

Table 3. 61 Significant t test results for participants who worked full and part-time and the measures in the study

Statement	t	df	P value	FT mean	PT mean
Career progression statement 1, promotion is important to me	-2.269	422	<0.05	4.46	4.96

T test: Age - 35 or under/36 plus

There were three significant t test results between participants aged 35 years and under or 36 plus years the psychological measures within the study. Significant results were found with, one work life balance and one career progression statements and masculine gender role identity. No significant results were found with self-efficacy, self esteem, motivation, work satisfaction, person-environment fit, gender identification, career barrier statements and the remaining work life balance, career progression and gender role identity statements.

Table 3. 62 Significant t test results for participants aged 35 or under and 36 plus and the measures in the study

Statement	t	df	P value	<35 mean	>36 mean
Work life balance statement 5, awareness of work life balance policies needs to be improved	-2.217	451	<0.05	2.36	2.63
Career progression statement 5, to be recognised in my field is important to me	-3.139	451	<0.05	4.56	4.87
Masculine gender role identity	-2.473	451	<0.05	48.47	50.79

T test: Length of time in the industry – 7 years and under/ 8 plus

There was only one significant t test result between participants that have worked in the games industry 7 years and under or over 8 years and the psychological measures in the study. The only significant result was one of the work life balance statements. None of the self-efficacy, self esteem, work satisfaction, person-environment fit, gender role identity, gender identification, career progression, career barriers or motivation statements were significant.

Table 3. 63 Significant t test results for participants who had worked in the industry 7 years and under or over 8 years and the measures in the study

Statement	t	df	P value	<7 Mean	>8 mean
Work life balance statement 8, there is a long hours culture in my organisation	-2.264	442	<0.05	4.46	4.96

3.5 ANOVA's

A number of one-way ANOVA's were conducted for each of the psychological measures of the study for all participants.

Age ANOVA

(5 age ranges: 18-25, 26-35, 36-45, 46-50 and 51+)

There were four significant results between participant's age and the psychological measures in the study. The significant results were found with one of the career progression statements, one of the satisfaction at work statements, and two of the gender role identity characteristics, shown in the table below. Employing the Bonferroni post hoc test, significant differences were found between the following ages. The age ranges; 26-35 and 36-45 (<0.05) for career progression statement 5, 'to be recognised in my field is important to me'. Between the age ranges; 18-25 and 46-50 (<0.05) for the satisfaction at work statement 11, 'the design or shape of your organisation's structure'. Between the age ranges; 18-25 and 36-45 (<0.05) for sex role characteristic, 'strong personality'. Between the age ranges; 36-45 and 46-50 (<0.05) for sex role characteristic, 'willing to take a stand.'

No significant results were found with the other career progression, satisfaction at work statements or any of the other gender role identity characteristics or any of the statements and total results for; self-efficacy, self esteem, job, organisational and total satisfaction, job and organisational fit, gender role identity, gender identification, any of the work life balance, or career barriers statements, extrinsic motivation and intrinsic motivation.

Table 3. 64 Significant one-way ANOVA results between the age ranges of participants and the measures in the study

Statement	f	df	P value
Career progression statement 5, To be recognised in my field is important to me	2.564	4,448	<0.05
Satisfaction at work statement 11, the design or shape of your organisation's structure	2.445	4,448	<0.05
Sex role characteristic, strong personality	3.411	4,448	<0.05
Sex role characteristic, willing to take a stand	2.764,	4,448	<0.05

Grade reduced ANOVA

(Junior, middle and senior)

No post hoc tests were available since there were fewer than two cases in at least one of the groups.

There were two significant results between participants and the reduced grade categories and the psychological measures in the study. The significant results, shown below, were found with one motivation and one gender role identity statement. No significant results were found with any of the self esteem, self-efficacy, work life balance, person-environment fit, work satisfaction, career progression, gender identification or career barriers statements.

Table 3. 65 Significant one-way ANOVA results between participants and the reduced grade categories and the measures in the study

Statement	f	df	P value
Motivation statement 17, I am more comfortable when I set my own goals	3.571	2,445	<0.05
Gender role identity characteristic, strong personality	5.442	2,445	<0.01

Country ANOVA

(6 countries: UK, USA, Europe, Canada, Australia/NZ and other parts of the world)

There were numerous significant results between participant's country of work and the psychological measures in the study. The significant results were found with two of the self-esteem statements and total self esteem, four of the self-efficacy statements and total self-efficacy, four of the person-environment fit statements and total person-environment fit, ten of the motivation statements and intrinsic motivation, one of the work satisfaction statements, seven of the gender role identity characteristics and masculine gender role identity and high/low masculine, one of the gender identification statements and five of the career barrier statements.

Employing the Bonferroni post hoc test, significant differences were found between the following countries. Between the UK and the USA (<0.05) for self esteem statement 1, 'on the whole I am satisfied with myself', self esteem statement 3, 'I feel I have a number of good qualities' and total self esteem. Participants in the USA had higher mean scores. Between the countries; the UK and the USA (<0.05) for self-efficacy statement 1, 'I can remain calm when facing difficulties in my job because I can rely on my abilities', self-efficacy statement 2, 'when I am confronted with a problem in my job, I can usually find several solutions', self-efficacy statement 3, 'whatever comes my way in my job, I can usually handle it', self-efficacy statement 6, 'I feel prepared for most of the demands in my job', total self-efficacy and high or low self-efficacy.

Between the countries; Australia/New Zealand and the USA (<0.05) for person-environment fit statement 1, 'my abilities fit the demands of this job', person-environment fit statement 2, 'I have the right skills and abilities for doing this job', person-environment fit statement 4, 'my personality is a good match for this job'. Between the countries: Australia/New Zealand and the USA and Australia/New Zealand and Europe (<0.05) for person-environment fit statement 5, 'I am the right type of person for this type of work', and total person-environment fit. Between the countries: Australia/New Zealand and the USA and Australia/New Zealand and Canada, Australia/New Zealand and other, Europe and Canada, Europe and other (<0.05) for motivation at work statement 4, 'I am keenly aware of my income goals I have for myself, I am the right type of person for this type of work', motivation at work statement 8, 'no matter what the outcome of a project, I am satisfied if I feel I gained a new experience'. Between the countries: Australia/New Zealand and the USA and the USA and the UK (<0.05) for motivation at work statement 10, 'I am keenly aware of the goals I have for myself'.

Between the countries: the USA and the UK (<0.05) for motivation at work statement 11, 'curiosity is the driving force behind much of what I do', motivation at work statement 17, 'I am more comfortable when I set my own goals', intrinsic motivation at work, gender role identity characteristic, willing to take a stand, career barriers statement 1, 'I think the glass ceiling exists', gender identification statement 4, 'at work my gender has very little to do with how I feel about myself', career barriers

statement 3, 'some careers are more female friendly than others' and career barriers statement 4, 'there are no covert barriers to women's achievement'. Between the countries Australia/New Zealand and Canada (<0.05) for motivation at work statement 12, 'I am less concerned with what work I do than what I get from it'. Between the countries Australia/New Zealand and Canada, Australia/New Zealand and the UK, Australia/New Zealand and the USA, Australia/New Zealand and Europe, the USA and other, Canada and other (<0.05) for motivation at work statement 18, 'I believe there is no point doing a good job if nobody else knows about it' and motivation at work statement 20, 'it is important for me to be able to do what I most enjoy', motivation at work statement 21, 'I prefer working on projects with clearly specified procedures'. Between the countries Australia/New Zealand and the USA (<0.05) for motivation at work statement 24, 'I am strongly motivated by the recognitions I can earn from other people'.

Between the countries: Canada and the UK, Canada and the USA, Canada and Europe (<0.05) for satisfaction at work statement 12, 'the degree to which you feel extended in your job'. Between the countries: Australia/New Zealand and Europe, Australia/New Zealand and Canada, Australia/New Zealand and the USA (<0.05) for the gender role identity characteristic, assertive. Between the countries: Australia/New Zealand and the USA (<0.05) for the gender role identity characteristic, strong personality. Between the countries: Australia/New Zealand and the USA, the USA and the UK (<0.05) for masculine gender role identity and masculine high or low. Between the countries: other and the UK, other and the USA, other and Canada, the USA and Australia/New Zealand (<0.05) for career barriers statement 2, 'equal opportunities legislation means there are no barriers to women in employment'. Between the countries: the USA and the UK, the USA and Other, the UK and other, other and Europe, Canada and other, Australia/New Zealand and other (<0.05) for career barriers statement 5, 'I think the glass ceiling exists'.

No significant results were found with the other career progression, satisfaction at work, career barrier, gender identification statements or any of the other gender role identity characteristics or any if the statements and total results for: work life balance statements and total job, organisational fit, job, organisational and total satisfaction and extrinsic motivation.

Table 3. 66 Significant one-way ANOVA results between the country of participants and the measures in the study

Statement	f	df	P value
Self esteem statement 1, on the whole I am satisfied with myself	3.162	5,447	<0.01
Self esteem statement 3, I feel I have a number of good qualities	2.251	5,447	<0.05
Total self esteem	2.382	5,447	<0.05
Self-efficacy statement 1, I can remain calm when facing difficulties in my job because I can rely on my abilities	3.357	5,447	<0.05
Self-efficacy statement 2, when I am confronted with a problem in my job, I can usually find several solutions	3.409	5,447	<0.05
Self-efficacy statement 3, whatever comes my way in my job, I can usually handle it	2.963	5,447	<0.05
Self-efficacy statement 6, I feel prepared for most of the demands in my job	2.930	5,447	<0.05
Total self-efficacy	3.709	5,447	<0.01
High or low self-efficacy	3.401	5,447	<0.05
Person-environment fit statement 1, my abilities fit the demands of this job	2.833	5,447	<0.05
Person-environment fit statement 2, I have the right skills and abilities for doing this job	2.382	5,447	<0.05
Person-environment fit statement 4, my personality is a good match for this job	3.188	5,447	<0.01
Person-environment fit statement 5, I am the right type of person for this type of work	3.020	5,447	<0.05
Total person-environment fit	3.456	5,447	<0.01
Motivation at work statement 4, I am keenly aware of my income goals I have for myself	7.658	5,447	<0.001
Motivation at work statement 8, no matter what the outcome of a project, I am satisfied if I feel I gained a new experience	6.325	5,447	<0.001
Motivation at work statement 10, I am keenly aware of the goals I have for myself	6.206	5,447	<0.001
Motivation at work statement 11, curiosity is the driving force behind much of what I do	2.863	5,447	<0.05
Motivation at work statement 12, I am less concerned with what work I do than what I get from it	2.42	5,447	<0.05
Motivation at work statement 17, I am more comfortable when I set my own goals	3.876	5,447	<0.01
Motivation at work statement 18, I believe there is no point doing a good job if nobody else knows about it	7.500	5,447	<0.001
Motivation at work statement 20, it is important for me to be able to do what I most enjoy	2.595	5,447	<0.05
Motivation at work statement 21, I prefer working on projects with clearly specified procedures	2.473	5,447	<0.05
Motivation at work statement 24, I am strongly motivated by the recognitions I can earn from other people	2.818	5,447	<0.05
Intrinsic motivation at work	3.601	5,447	<0.01
Satisfaction at work statement 12, the degree to which you feel extended in your job	2.809	5,447	<0.05
Gender role identity characteristic, assertive	4.601	5,447	<0.001
Gender role identity characteristic, strong personality	3.057	5,447	<0.01
Gender role identity characteristic, leadership abilities	7.244	5,447	<0.001
Gender role identity characteristic, willing to take risks	4.404	5,447	<0.001
Gender role identity characteristic, dominant	2.241	5,447	<0.05
Gender role identity characteristic, aggressive	6.378	5,447	<0.001
Gender role identity characteristic, willing to take a stand	4.213	5,447	<0.001
Masculine gender role identity	5.674	5,447	<0.001
Masculine high or low	5.407	5,447	<0.001
Gender identification statement 4, at work my gender has very little to do with how I feel about myself	2.366	5,447	<0.05
Career barriers statement 1, I think the glass ceiling exists	2.837	5,447	<0.05
Career barriers statement 2, equal opportunities legislation means there are no barriers to women in employment	3.961	5,447	<0.01
Career barriers statement 3, some careers are more female friendly than others	2.574	5,447	<0.05
Career barriers statement 4, there are no covert barriers to women's achievement	5.414	5,447	<0.001
Career barriers statement 5, I think the glass ceiling exists	3.033	5,447	<0.05

Professional identity ANOVA

(12 professional identities: artists, coders, designers, writers, producers, lecturers, researchers, audio engineers, engineers, executives, QA, other)

There were numerous significant results between participant's professional identity and the psychological measures in the study. The significant results were found with one of the self-esteem statements, two of the person-environment fit statements, eight of the motivation statements, four of the work satisfaction statements, three of the gender role identity characteristics and masculine gender role identity and high/low masculine, androgynous gender role identity and high/low androgyny, one of the gender identification statements and four of the career barrier statements.

Employing the Bonferroni post hoc test, significant differences were found between the following professions. Between engineers and artists, engineers and executives, engineers and other (<0.05) for self esteem statement 6, 'I certainly feel useless at times' and person-environment fit statement 4, 'my personality is a good match for this job'. Between the professions: engineers and artists, engineers and designers, engineers and lecturers, engineers and executives, engineers and other (<0.05) for person-environment fit statement 5, 'I am the right type of person for this type of work'. Between the professions: executives and artists, executives and coders, executives and designers (<0.05) for motivation at work statement 2, 'I prefer having someone set clear goals for me in my work' and motivation at work statement 15, 'I am concerned about how other people are going to react to my ideas'.

Between the professions: executives and artists, executives and designers (<0.05) for motivation at work statement 17, 'I am more comfortable when I set my own goals' and motivation at work statement 19, 'I am strongly motivated by the money I can earn'. Between the professions: artists and producers, artists and executives, artists and other (<0.05) for motivation at work statement 21, 'I prefer working on projects with clearly specified procedures, motivation at work statement 22, 'as long as I can do what I enjoy, I'm not concerned about exactly what I am paid' and motivation at work statement 23, 'I enjoy doing work that is so absorbing that I forget about everything else'. Between the professions: other and designers (<0.05) for motivation

at work statement 27, 'it is important for me to have an outlet for self-expression'. Between the professions: QA and writers, QA and engineers, QA and executives (<0.05) for career progression statement 1, 'promotion is important to me'. Between the professions: executives and lecturers, executives and engineers (<0.05) for satisfaction at work statement 6, 'the kind of work or tasks you are required to perform'. Between the professions: executives and engineers (<0.05) for satisfaction at work statement 7, 'the degree to which you feel that you can personally develop or grow in your job'.

Between the professions: executives and QA (<0.05) for satisfaction at work statement 9, 'the degree to which your job taps into the range of skills which you feel you have'. Between the professions: executives and engineers (<0.05) for satisfaction at work. Between the professions: executives and artists, executives and coders (<0.05) for sex role characteristics, forceful. Between the professions: coders and lecturers, executives and coders (<0.05) for sex role characteristics, leadership abilities.

There was a significant difference between the professional identity of participants and the sex role characteristics, dominant ($F = (11,442) = 2.483, p < 0.05$, two-tailed). Employing the Bonferroni post hoc test, a number of significant differences were found between the professions. Between the professions: artists and producers, artists and QA's, artists and executives (<0.05) for masculine gender role identity. Between the professions: executives and artists (<0.05) for high or low masculine gender role identity. Between the professions: writers and others (<0.05) for androgynous gender role identity. Between the professions: artists and writers, writers and coders, writers and designers, writers and other (<0.05) for high or low androgynous gender role identity. Between the professions; writers and designers (<0.05) for gender identification statement 3, 'at work my gender is an important reflection of who I am'. Between the professions; coders and lecturers (<0.05) for career barriers statement 1, 'I think the glass ceiling exists' and career barriers statement 2, 'equal opportunities legislation means there are no barriers to women in employment'. Between the professions; artists and lecturers (<0.05) for career barriers statement 4, 'there are no covert barriers to women's achievement'. Between the professions;

engineers and other (<0.05) for career barriers statement 5, 'women are well represented in my profession'.

No significant results were found with the other career progression, satisfaction at work, career barrier, gender identification statements or any of the other gender role identity characteristics or any if the statements and total results for: work life balance statements and total self esteem, total job, organisational fit, job, organisational and total satisfaction, any of the self-efficacy statements or total self-efficacy, intrinsic and extrinsic motivation.

Table 3. 67 Significant one-way ANOVA results between the professional identity of participants and the measures in the study

Statement	f	df	P value
Self esteem statement 6, I certainly feel useless at times	2.310	11,442	<0.01
Person-environment fit statement 4, my personality is a good match for this job	1.832	11,442	<0.05
Person-environment fit statement 5, I am the right type of person for this type of work	1.840	11,442	<0.05
Motivation at work statement 2, I prefer having someone set clear goals for me in my work	3.266	11,442	<0.001
Motivation at work statement 15, I am concerned about how other people are going to react to my ideas	2.117	11,442	<0.05
Motivation at work statement 17, I am more comfortable when I set my own goals	2.151	11,442	<0.05
Motivation at work statement 19, I am strongly motivated by the money I can earn	2.452	11,442	<0.05
Motivation at work statement 21, I prefer working on projects with clearly specified procedures	2.695	11,442	<0.05
Motivation at work statement 22, as long as I can do what I enjoy, I'm not concerned about exactly what I am paid	1.886	11,442	<0.05
Motivation at work statement 23, I enjoy doing work that is so absorbing that I forget about everything else	2.828	11,442	<0.001
Motivation at work statement 27, it is important for me to have an outlet for self-expression	2.581	11,442	<0.01
Career progression statement 1, promotion is important to me	2.992	11,442	<0.001
Satisfaction at work statement 6, the kind of work or tasks you are required to perform	2.249	11,442	<0.05
Satisfaction at work statement 7, the degree to which you feel that you can personally develop or grow in your job	2.024	11,442	<0.05
Satisfaction at work statement 9, the degree to which your job taps into the range of skills which you feel you have	2.249	11,442	<0.05
Satisfaction at work	2.211	11,442	<0.05
Sex role characteristics, forceful	2.322	11,442	<0.01
Sex role characteristics, leadership abilities	3.113	11,442	<0.001
Sex role characteristics, dominant	2.483	11,442	<0.05
Masculine gender role identity	2.398	11,442	<0.01
High or low masculine gender role identity	2.722	11,442	<0.01
Androgynous gender role identity	2.698	11,442	<0.01
High or low androgynous gender role identity	2.746	11,442	<0.01
Gender identification statement 3, at work my gender is an important reflection of who I am	2.355	11,442	<0.01
Career barriers statement 1, I think the glass ceiling exists	2.558	11,442	<0.01
Career barriers statement 2, equal opportunities legislation means there are no barriers to women in employment	1.840	11,442	<0.05
Career barriers statement 4, there are no covert barriers to women's achievement	2.558	11,442	<0.01
Career barriers statement 5, women are well represented in my profession	2.675	11,442	<0.01

Length of time in the industry ANOVA

(10 year ranges: less than 1 yr, 1-3yrs, 4-7 yrs, 8-11 yrs, 12-15 yrs, 16-19 yrs, 20-23 yrs, 24-27 yrs, 28-31 yrs and 32+)

There were ten significant results between participant's length of time in the games industry and the psychological measures in the study. The significant results, shown below, were found with seven of the motivation statements, one of the gender role identity characteristics and high/low androgyny, and one of the career barrier statements. No post hoc tests were available since there were fewer than two cases in at least one of the groups.

No significant results were found with the other career barrier, motivation statements or any of the other gender role identity characteristics or any of the statements and total results for self esteem, work life balance statements, person-environment fit, work satisfaction, gender identification, career progression or self-efficacy.

Table 3. 68 Significant one-way ANOVA results between participants length of time in the games industry and the measures in the study

Statement	f	df	P value
Motivation at work statement 3, the more difficult the problem, the more I enjoy trying to solve it	2.077	8,435	<0.05
Motivation at work statement 4, I am keenly aware of the income goals I have for myself	2.049	8,435	<0.05
Motivation at work statement 8, no matter what the outcome of a project, I am satisfied if I feel I gained a new experience	2.076	8,435	<0.05
Motivation at work statement 11, curiosity is the driving force behind much of what I do	2.198	8,435	<0.05
Motivation at work statement 12, I am less concerned with what work I do than what I get from it	3.022	8,435	<0.01
Motivation at work statement 22, as long as I can do what I enjoy, I am not concerned about exactly what I get paid	2.174	8,435	<0.05
Motivation at work statement 23, I enjoy doing work that is so absorbing that I forget about everything else	2.200	8,435	<0.05
Sex role characteristic, independent	2.035	8,435	<0.05
High or low androgynous gender role identity	2.548	8,435	<0.05
Career barriers statement 1, I think the glass ceiling exists	2.338	8,435	<0.05

Intentions in 5 years time ANOVA

(3 choices: yes, no, did not know)

There were eighteen significant results between participant's intention to stay in the games industry in the next 5 years or not and the psychological measures in the study. The significant results, shown below, were found with one of the motivation statements and high/low extrinsic, androgynous gender role identity, job satisfaction

and high/low satisfaction, three satisfaction at work statements, one self-efficacy, five person-environment fit, job fit and high/low organisational fit, and one career progression statement.

Employing the Bonferroni post hoc test, significant differences were found between the following. Between those that did intend to stay and those that did not (<0.05) for job satisfaction, high or low satisfaction at work, androgynous gender role identity, self-efficacy statement 4, 'my past experiences in my job have prepared me well for my occupational future', person-environment fit statement 1, 'my abilities fit the demands of this job', person-environment fit statement 7, 'I am able to maintain my values at this company', and high or low extrinsic motivation. Between those that did intend to stay and those that did not know (<0.05) for person-environment fit statement 3, there is a good match between the requirements of this job and my skills, person-environment fit statement 5, 'I am the right type of person for this type of work', job fit, organisational fit, and career progression statement 3, 'I am progressing in my career'. Between those that did intend to stay and those that did not, those that did intend to stay and those that did not know (<0.05) for person-environment fit statement 6, 'my values match or fit the values of this organisation'. Between those that did intend to stay and those that did not, those that did not want to stay and those that did not know (<0.05) for high or low organisational fit, motivation at work statement 1, 'I am not that concerned about what other people think of me at work', satisfaction at work statement 3, the degree to which you feel 'motivated' by your job, satisfaction at work statement 7, 'the degree to which you feel that you can personally develop or grow in your job' and satisfaction at work statement 10, 'the psychological 'feel' or climate that dominates your organisation'.

No significant results were found with any of the self esteem, work life balance statements, or gender identification statements.

Table 3. 69 Significant one-way ANOVA results between participants intentions to stay in the games industry and the measures in the study

Statement	f	df	P value
Job satisfaction	3.812	2,446	<0.05
High or low satisfaction at work	3.753	2,446	<0.05
androgynous gender role identity	4.148	2,446	<0.05
Self efficacy statement 4, my past experiences in my job have prepared me well for my occupational future	4.407	2,446	<0.05
Person-environment fit statement 1, my abilities fit the demands of this job	3.246	2,446	<0.05
Person-environment fit statement 3, there is a good match between the requirements of this job and my skills	5.041	2,446	<0.01
Person-environment fit statement 5, I am the right type of person for this type of work	6.393	2,446	<0.01
Person-environment fit statement 6, my values match or fit the values of this organisation	3.246	2,446	<0.01
Person-environment fit statement 7, I am able to maintain my values at this company	5.528	2,446	<0.01
Job fit	4.884	2,446	<0.01
Organisational fit	6.050	2,446	<0.01
High or low organisational fit	7.923	2,446	<0.001
Motivation at work statement 1, I am not that concerned about what other people think of me at work	3.525	2,446	<0.05
High or low extrinsic motivation	3.548	2,446	<0.05
Career progression statement 3, I am progressing in my career	5.185	2,446	<0.01
Satisfaction at work statement 3, the degree to which you feel 'motivated' by your job	6.224	2,446	<0.01
Satisfaction at work statement 7, the degree to which you feel that you can personally develop or grow in your job	5.228	2,446	<0.01
Satisfaction at work statement 10, the psychological 'feel' or climate that dominates your organisation	3.163	2,446	<0.05

Promotions ANOVA

(The number of times in the past 5 years they have been promoted, 6: none, 1,2,3,4,5+)

There were four significant results between participants and the number of times they have been promoted in the past 5 years and the psychological measures in the study. The significant results, shown below, were found with two of the motivation statements, one career progression statement and high/low gender identification. Employing the Bonferroni post hoc test, significant differences were found between the following. Between those that have been promoted once and three times (<0.05) for work statement 12, 'I am less concerned with what work I do than what I get from it' and motivation at work statement 14, 'I prefer work I know I can do well over work that stretch my abilities'. Between those that have not been promoted and those that had four times, between those promoted one and four times, twice and four times, three times and four times (<0.05) for high or low gender identification and career progression statement 1, 'promotion is important to me'.

No significant results were found with any of the self esteem, self-efficacy, work life balance, person-environment fit, work satisfaction, or career barriers statements.

Table 3. 70 Significant one-way ANOVA results between the number of times participants had been promoted in the last 5 years and the measures in the study

Statement	f	df	P value
Motivation at work statement 12, I am less concerned with what work I do than what I get from it	3.083	5,428	<0.05
Motivation at work statement 14, I prefer work I know I can do well over work that stretch my abilities	2.311	5,428	<0.05
Career progression statement 1, promotion is important to me	2.315	5,428	<0.05
High or low gender identification	5.247	5,428	<0.001

Relocation ANOVA

(3 choices: yes, no, do not know)

There were seven significant results between participants and those that would, wouldn't and did not know whether they would relocate and the psychological measures in the study. The significant results, shown below, were found with two of the motivation statements, one person-environment statement three gender role identity characteristics and masculine gender role identity.

Employing the Bonferroni post hoc test, significant differences were found between the following. Between those that said they would and those that said they wouldn't relocate (<0.05) for sex role characteristic, strong personality, willing to take risks, masculine gender role identity, person-environment fit statement 2, 'I have the right skills and abilities for doing this job' and motivation at work statement 26, 'I enjoy trying to solve complex problems'. Between those that said they would and those that said they wouldn't relocate, those that said they would relocate and those that did not know (<0.05) for motivation at work statement 27, 'it is important for m to have an outlet for self-expression'.

No significant results were found with any of the self esteem, self-efficacy, work life balance, career progression, gender identification, work satisfaction, or career barriers statements.

Table 3. 71 Significant one-way ANOVA results between participants relocation attitudes and the measures in the study

Statement	f	df	P value
Sex role characteristic, strong personality	3.081	2,446	<0.05
Sex role characteristic, willing to take risks	3.553	2,446	<0.05
Sex role characteristic, willing to take a stand	3.907	2,446	<0.05
Masculine gender role identity	3.081	2,446	<0.05
Person-environment fit statement 2, I have the right skills and abilities for doing this job	3.589	2,446	<0.05
Motivation at work statement 26, I enjoy trying to solve complex problems	4.274	2,446	<0.05
Motivation at work statement 27, it is important for m to have an outlet for self-expression	4.626	2,446	<0.05

Employment status ANOVA

(3 choices: full time, part-time and other)

There were seven significant results between participants and those that would, wouldn't and did not know whether they would relocate and the psychological measures in the study. The significant results, shown below, were found with two of the motivation statements, one person-environment statement three gender role identity characteristics and masculine gender role identity.

Employing the Bonferroni post hoc test, significant differences were found between the following. Between those employed in full time and those in part-time work (<0.05) for self esteem statement 4, 'I am able to do things as well as most people', self esteem statement 7, 'I feel that I am a person of worth, at least on an equal plane with others', person environment fit statement 3, 'there is a good match between the requirements of this job and my skills', high or low person environment fit and motivation at work statement 14, 'I prefer work I know I can do well over work that stretch my abilities'. There was a significant difference between the type of employment and ($F = (2,449) = 4.466, p = <0.05$, two-tailed). Between those employed on a part-time basis and those employed in some other form (<0.05) for career progression statement 1, 'promotion is important to me', gender identification statement 1, 'at work my gender is important to my self-image' and sex role characteristic, aggressive. Between those employed on a part-time basis and those employed in some other form, those employed on a full time and part-time basis (<0.05) for gender identification statement 2, 'at work my gender is unimportant to my sense of what kind of person I am'.

No significant results were found with any of the self esteem, self-efficacy, work life balance, career progression, gender identification, work satisfaction, or career barriers statements.

Table 3. 72 Significant one-way ANOVA results between participants employment status and the measures in the study

Statement	f	df	P value
Self esteem statement 4, I am able to do things as well as most people	3.609	2,449	<0.05
Self esteem statement 7, I feel that I am a person of worth, at least on an equal plane with others	4.097	2,449	<0.05
Person environment fit statement 3, there is a good match between the requirements of this job and my skills	4.039	2,449	<0.05
Motivation at work statement 14, I prefer work I know I can do well over work that stretch my abilities	3.391	2,449	<0.05
Career progression statement 1, promotion is important to me	4.466	2,449	<0.05
Sex role characteristic, aggressive	3.253	2,449	<0.05
Gender identification statement 1, at work my gender is important to my self-image	4.787	2,449	<0.01
Gender identification statement 2, at work my gender is unimportant to my sense of what kind of person I am	6.875	2,449	<0.001

3.6 Structural Equation Model (SEM)

McDonald (1999) characterised SEM as: *'a dangerously conjectural technique for asking essential research questions which otherwise are impossible to consider'* (McDonald and Ringo Ho, 2002, p79). Since the output of structural equation models are vast; guidance on how and what to report from the output was sought from a number of sources in the aim of avoiding some of these dangers (Boomsma, 2000; Byrne, 2001; McDonald and Ringo Ho, 2002; Schumaker and Lomax, 2004).

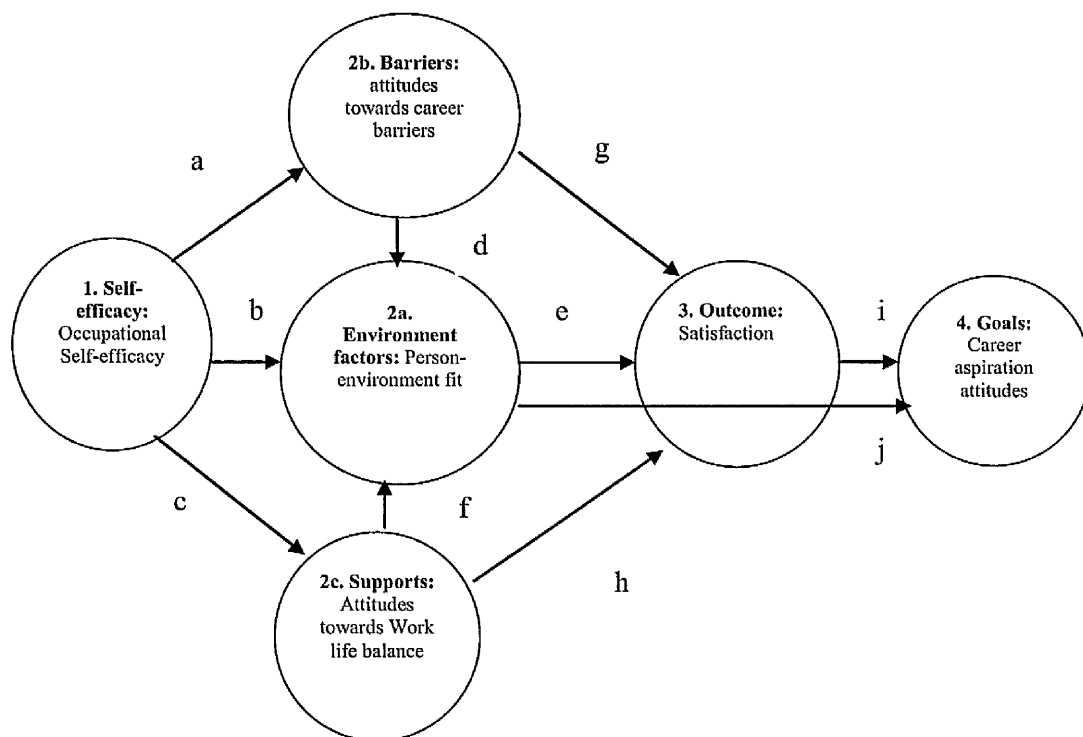
3.6.1 Theoretical framework

Social Cognitive Career Theory (SCCT) provides a framework for the structure of the research and the proposed model (Lent, Brown and Hackett, 1994). SCCT focuses on the connection of self-efficacy, outcome expectations and personal goals, interests and environmental factors that influence an individual's career choice. SCCT proposes that career choice is influenced by the beliefs the individual develops and refines through four major sources a) personal performance accomplishments, b) vicarious learning, c) social persuasion and d) physiological states and reactions. How these aspects work together in career development is through a process in which an individual develops an expertise/ability for a particular activity and meets with success. This process reinforces one's self-efficacy or belief in future continued success in the use of this ability/expertise. As a result, one is likely to develop goals that involve continuing involvement in that activity.

3.6.2 Research question and model

A number of models were developed with the variables of work satisfaction, occupational self-efficacy, attitudes towards career barriers, attitudes towards work life balance, person-environment fit and career aspiration attitudes for the current study data set following a SCCT framework. As well as the hypothesized model, a number of individual hypothesis were developed (see section 1.14). The hypothesised model is represented below in order to refresh the reader of the model first presented in the introduction chapter.

Figure 4 Hypothesized structural model based on the SCCT model in figure 1.



Notes: The letters next to each path correspond to the respective hypothesis letters.

3.6.3 The latent variables in the model and how they are measured

Occupational self-efficacy (Self-efficacy) latent variable is measured by six observed variables. Using the short version of the occupational self-efficacy scale developed by Rigotti, Schyns and Mohr (2008). The scale consists of six items measured on a six point Likert scale from 1 'not at all' to 6 'completely true' resulting in a total self-efficacy score. See section 2.2.6 for survey development details of the observed variables.

Work life balance (WLB) latent variable is measured by four observed variables; I am happy with my WLB, the number of hours I work affects my personal relationships, the number of hours I work does not affect my personal health (reverse score) and my colleagues approve when I need to leave work because of outside commitments. A six point Likert scale, ranging from 1 'very strongly disagree' to 6 'very strongly agree' was used to measure the extent participants agreed/disagreed with the statements. See section 2.2.6 for survey development details of the observed variables.

Career barriers (Barriers) latent variable is measured by four observed variables; I think the glass ceiling exists (reverse measure), equal opportunities legislation means there are no barriers to women in employment, women are well represented in my profession and women are well represented in my organisation measured the latent variable. Measured on a six point Likert scale, ranging from 1 'very strongly disagree' to 6 'very strongly agree'. See section 2.2.6 for survey development details of the observed variables.

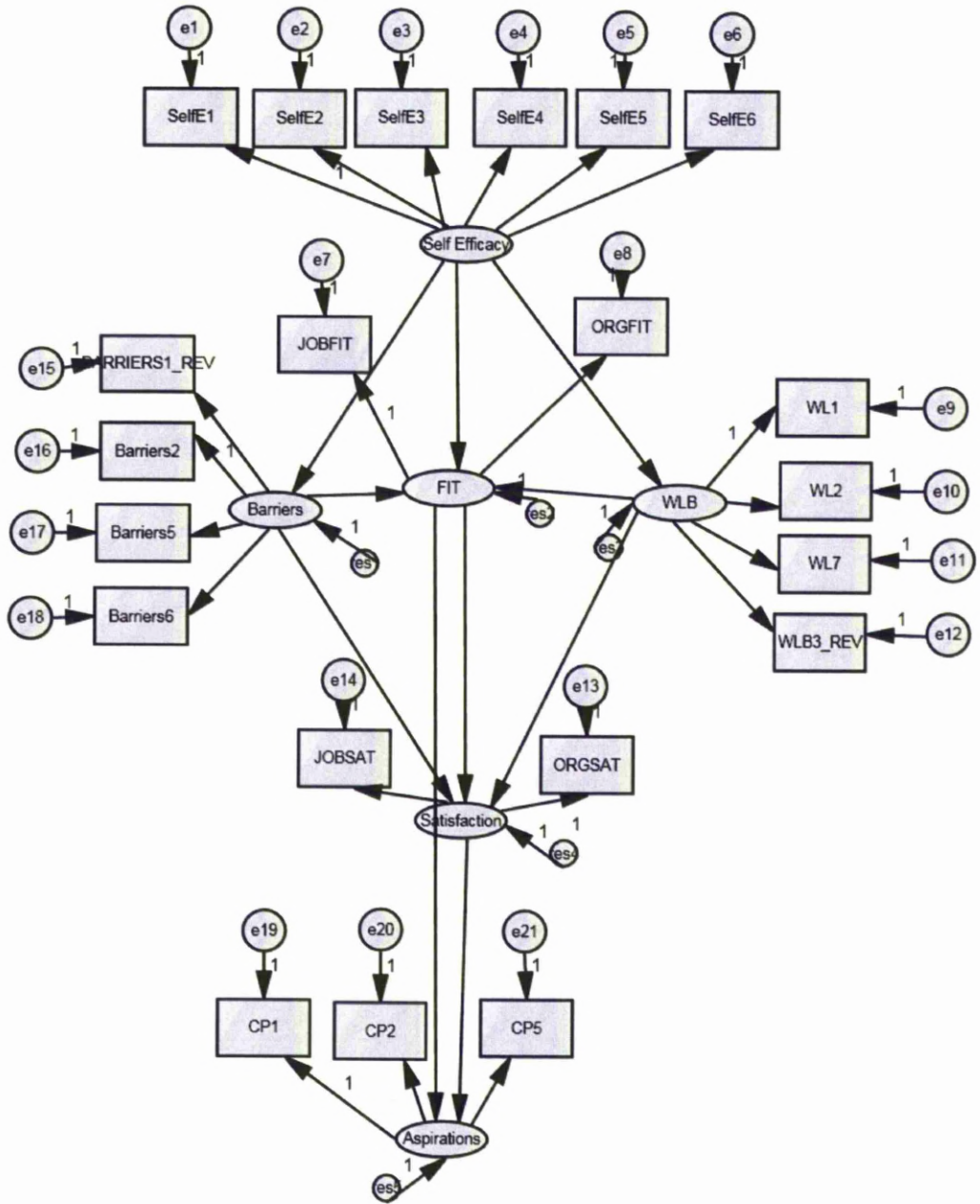
Satisfaction latent variable is measure by two observed variables; job satisfaction measured by six observed variables and organisational satisfaction measured by six observed variables. This was measured via the job and organisational satisfaction scale of the Pressure Management Index (Williams and Cooper 1998).The scale consists of twelve items, measured on a Likert response scale, from 1= 'very strongly disagree', to 6= 'very strongly agree'. See section 2.2.6 for survey development details of the observed variables.

Person-environment Fit (Fit) latent variable is measured by two observed variables; job fit measured by five observed variables and organisation fit measured by three observed variables. Using a scale developed by Lauver and Kristof-Brown (2001). The scale consists of eight items, measured on a seven point Likert response scale, ranging from 1 'very strongly disagree' to 7 'very strongly agree'. See section 2.2.6 for survey development details of the observed variables.

Career aspiration attitudes (Aspirations) latent variable is measured by three observed variables; promotion is important to me, I intend to climb the career ladder and I am prepared to make personal sacrifices in order to do so and to be recognised in my field is important to me. Participants were asked to indicate the extent they agree/disagree with statements on career progression and promotion, measured on a six point Likert scale, ranging from 1 'very strongly disagree' to 6 'very strongly agree'. See section 2.2.6 for survey development details of the observed variables.

Figure 5 Model of career influences

Model 1: Model of career influences based on a SCCT framework



3.6.4 Model evaluation

SEM analyses were conducted with Amos version 6.0. Four participants were removed, two outliers and two due to missing data. The final model was based on a sample of 450 women working in the computer games industry. Multivariate normality assumptions were met, maximum-likelihood estimation was used, and scaling metrics for the latent variables were fixed by setting factor variances (reference variables) to 1. Model fit was assessed using the χ^2 test statistic. However, due to the lack of guidance χ^2 index provides in determining the extent to which the model fits the data we rely on other indexes of fit; the goodness-of-fit (GFI), Tucker–Lewis (TLI), and comparative-fit (CFI) indexes, and the root mean square error of approximation (RMSEA) (Byrne, 2001). As the χ^2 test statistic is sensitive to sample size (the more participants, the higher the value), it has been recommended that it be used with caution (Medsker, Williams, and Holahan, 1994), and to consider an χ^2 value 2 to 3 times greater than the degrees of freedom is viewed acceptable (Carmines and McIver, 1981). Modification indexes were also examined to assess possible improvement to the fit of the models being tested (Byrne, 2001). Values for the GFI (goodness of fit index), TLI (Tucker Lewis index), and CFI (comparative fit index) range from 0 to 1; with estimates of .9 or above indicating an acceptable measure of fit (Byrne, 2001). The RMSEA (Root mean square error of approximation index) has a lower boundary of zero, with values of less than .08 indicating an acceptable error of approximation (Byrne, 2001).

3.6.5 Model fit (model 1)

The model in figure 5 fits the data. Goodness of fit summary – selected goodness of fit statistics related to the hypothesized model, is presented in table 3.77. Here we see that the overall χ^2 value, with 181 degrees of freedom, is 422.837. Values for the GFI (.916), TLI (.916), and CFI (.928) are all above .9 indicating an acceptable measure of fit and the RMSEA (.055) has a value of less than .08 indicating an acceptable error of approximation.

Table 3. 73 Goodness-of-Fit ($N = 450$)

<i>df</i>	χ^2	χ^2/df	GFI	TLI	CFI	RMSEA
181	422.832	2.362	.916	.915	.927	.055

The table below shows the un-standardized coefficients (estimate), its standard error (S.E.), the critical ratio (C.R.) and the probability value associated with the null hypothesis that the test is zero (P) for the original study model (model 1, see figure 5). Each un-standardized coefficient represents the amount of change in the dependent variable for each one unit of change in the variable preceding it. Four of the regression coefficients in this model are not significantly different from zero beyond the .01 level. Three are significant at the .05 level of significance (attitudes towards career barriers and self-efficacy, attitudes towards work life balance and satisfaction and career satisfaction and aspirations). Self-efficacy and attitudes towards work like balance, attitudes towards career barriers and attitudes towards work life balance and person-environment fit were all insignificant, $P > .005$ (highlighted), which may suggest they are not a good fit in the model. Therefore, in order to improve the model fit, the barriers to fit, WLB to fit and self-efficacy to WLB links were removed, resulting in a better fit model (model 2, see figure 6).

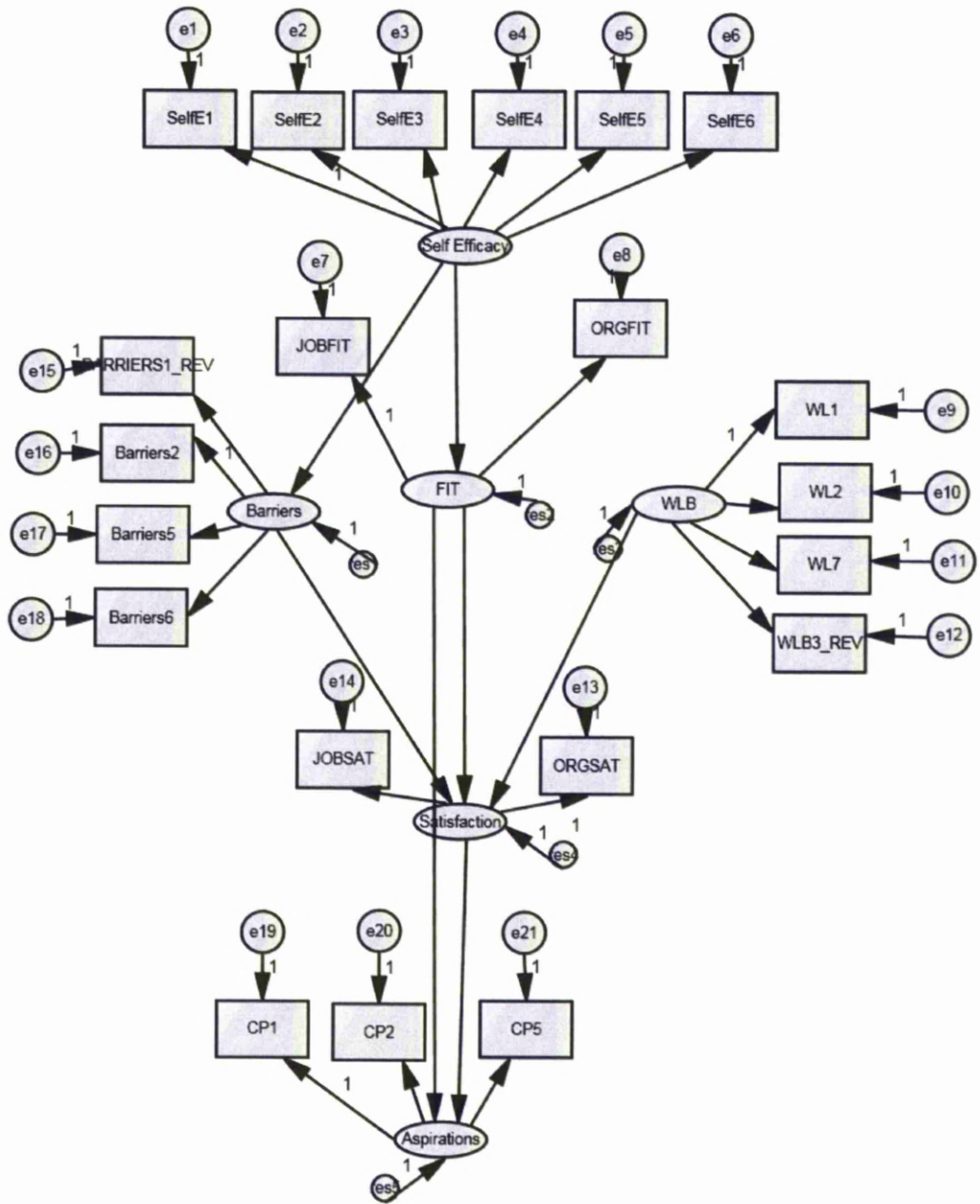
Table 3. 74 Maximum Likelihood Estimate: Regression Weights

		Estimate	S.E.	C.R.	P
Barriers (LV)	<--- Self Efficacy (LV)	.075	.034	2.200	.028
WLB (LV)	<--- Self Efficacy (LV)	-.121	.062	-1.936	.053
Fit (LV)	<--- Self Efficacy (LV)	4.411	.282	15.638	***
Fit (LV)	<--- WLB (LV)	.004	.198	.021	.983
Fit (LV)	<--- Barriers (LV)	-.030	.434	-.070	.944
Satisfaction (LV)	<--- Barriers (LV)	.698	.210	3.330	***
Satisfaction (LV)	<--- Fit (LV)	.178	.021	8.376	***
Satisfaction (LV)	<--- WLB (LV)	.191	.075	2.557	.011
Aspirations (LV)	<--- Fit (LV)	.078	.018	4.450	***
Aspirations (LV)	<--- Satisfaction (LV)	-.119	.053	-2.249	.025
SelfE1 (OV)	<--- Self Efficacy (LV)	1.000			
SelfE2 (OV)	<--- Self Efficacy (LV)	.887	.054	16.352	***
SelfE3 (OV)	<--- Self Efficacy (LV)	.935	.051	18.517	***
SelfE4 (OV)	<--- Self Efficacy (LV)	.889	.066	13.551	***
SelfE5 (OV)	<--- Self Efficacy (LV)	.932	.060	15.658	***
WL2 (OV)	<--- WLB (LV)	1.117	.083	13.506	***
JOBFIT (OV)	<--- Fit (LV)	1.000			
CP1 (OV)	<--- Aspirations (LV)	1.000			
CP2 (OV)	<--- Aspirations (LV)	1.063	.118	9.025	***
JOBSAT (OV)	<--- Satisfaction (LV)	3.483	.246	14.144	***
ORGSAT (OV)	<--- Satisfaction (LV)	3.243	.219	14.789	***
CP5 (OV)	<--- Aspirations (LV)	.488	.063	7.774	***
WL7 (OV)	<--- WLB (LV)	.557	.065	8.553	***
WLB3_REV (OV)	<--- WLB (LV)	.792	.069	11.512	***
BARRIERS1_REV (OV)	<--- Barriers (LV)	.984	.235	4.188	***
Barriers2 (OV)	<--- Barriers (LV)	1.000			
Barriers6 (OV)	<--- Barriers (LV)	2.468	.484	5.099	***
WL1 (OV)	<--- WLB (LV)	1.000			
Barriers5 (OV)	<--- Barriers (LV)	2.410	.474	5.080	***
ORGFIT (OV)	<--- Fit (LV)	.461	.045	10.261	***
SelfE6 (OV)	<--- Self Efficacy (LV)	1.079	.061	17.728	***

Latent variables are represented by (LV) and the observed variables by (OV).

Figure 6 Modified model

Model 2: Model of career influences based on a SCCT framework



3.6.6 Model fit (model 2: modified model)

With regards to the hypothesized model based on SCCT shown in figure 2, although the model isn't greatly improved from model one, there is some improvement and all the regression weights are now significant, therefore the model 2 is provisionally accepted for the current data set. Goodness of fit summary – selected goodness of fit statistics related to the hypothesized model is presented in table 3.79. Here we see that the overall χ^2 value, with 182 degrees of freedom, is 426.638. Values for the GFI (.915), TLI (.916), and CFI (.927) are all above .9 indicating an acceptable measure of fit and the RMSEA (.055) has a value of less than .08 indicating an acceptable error of approximation.

Table 3. 75 Goodness-of-Fit ($N = 450$) the modified model

<i>df</i>	χ^2	χ^2/df	GFI	TLI	CFI	RMSEA
182	426.638	2.344	.915	.916	.927	.055

3.6.7 Model characteristics

The model contains the following variables; 53 variables, 21 of which are observed variables, 32 unobserved variables, 27 exogenous variables and 26 endogenous variables. The Observed, endogenous variables; SelfE1, SelfE2, SelfE3, SelfE4, SelfE5, SelfE6, WL2, WL1, WLB3_REV, WL7, ORGFIT, JOBFIT, Barriers2, BARRIERS1_REV, Barriers5, Barriers6, ORGSAT, JOBSAT, CP2, CP1 and CP5. Unobserved, endogenous variables; Fit, Satisfaction, Aspirations, WLB, Barriers, Unobserved, exogenous variables; Self Efficacy, e1, e2, e3, e4, e5, e6, e7, e8, e9, e10, e11, e12, e13, e14, e15, e16, e17, e18, e19, e20, e21, res1, res2, res3, res4 and res5.

3.6.8 Model estimates

McDonald and Ringo Ho (2002) suggest that sample means, sample correlations matrices and sample covariance matrices should be included when reporting SEM findings. See table 3.76 for the sample means and SD's, a number of other estimates have been included in order to make replication of the study easier see Appendix 3.

Table 3. 76 Sample means and standard deviations

Variables	Mean	SD
WL1 (WLB statement 1)	3.87	1.101
WL2 (WLB statement 2)	3.68	1.245
WL3 (WLB statement 3)	3.47	1.165
WL7 (WLB statement 7)	3.70	1.107
JOB FIT (job fit sub score)	29.30	4.742
ORG FIT (organisation fit sub score)	16.13	3.690
SelfE 1 (Self-efficacy statement 1)	4.72	1.028
SelfE 2 (Self-efficacy statement 2)	4.95	.927
SelfE 3 (Self-efficacy statement 3)	4.96	.877
SelfE 4 (Self-efficacy statement 4)	4.76	1.098
SelfE 5 (Self-efficacy statement 5)	4.74	1.012
SelfE 6 (Self-efficacy statement 6)	4.72	1.051
CP1 (Career progression statement 1)	4.46	1.118
CP2(Career progression statement 2)	3.76	1.297
CP5 (Career progression statement 5)	4.65	.955
JOBSAT (job satisfaction sub score)	26.53	5.015
ORGSAT (organisation satisfaction sub score)	23.60	5.736
Barriers1 (Career barriers statement 1)	4.06	1.238
Barreirs2 (Career barriers statement 2)	3.29	1.472
Barriers5 (Career barriers statement 5)	2.70	1.343
Barriers6 (Career barriers statement 6)	3.34	1.406

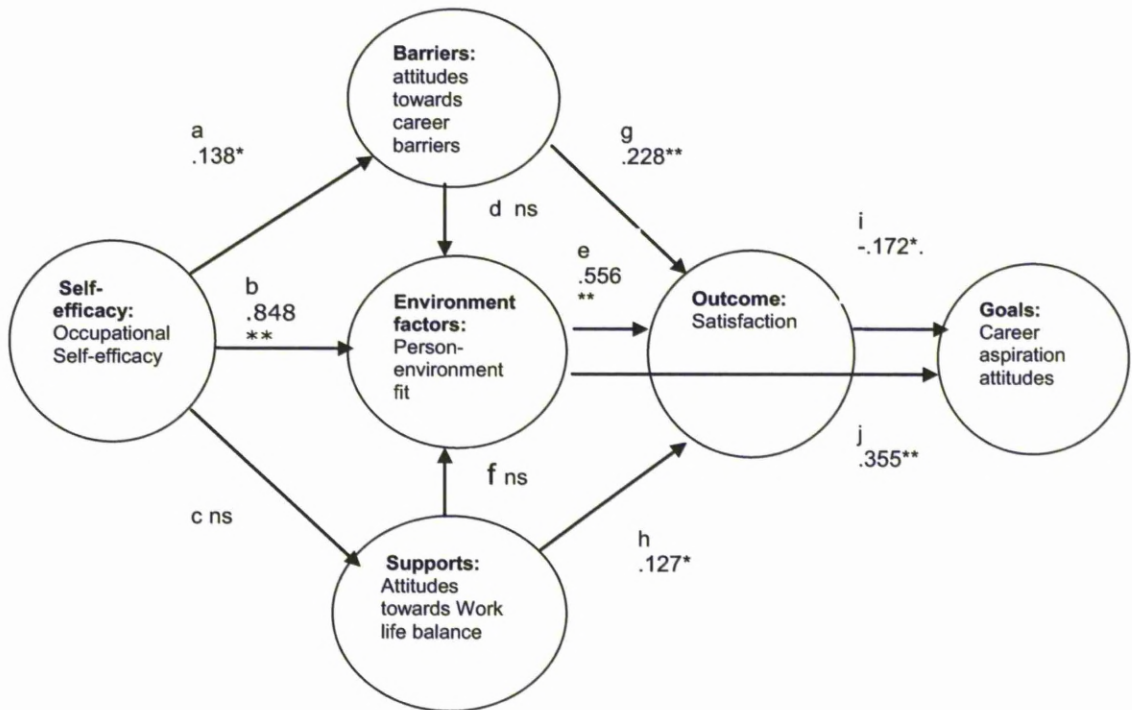
The table below shows the standardized estimates, this allows the evaluation of the relative contributions of each predictor variable to each outcome variable.

Table 3. 77 Standardized Regression Weights

Variables	Estimate
Fit <--- Self Efficacy	.848
Barriers <--- Self Efficacy	.138
Satisfaction <--- Barriers	.228
Satisfaction <--- Fit	.556
Satisfaction <--- WLB	.127
Aspirations <--- Fit	.355
Aspirations <--- Satisfaction	-.172
SelfE1 <--- Self Efficacy	.765
SelfE2 <--- Self Efficacy	.751
SelfE3 <--- Self Efficacy	.839
SelfE4 <--- Self Efficacy	.637
SelfE5 <--- Self Efficacy	.724
WL2 <--- WLB	.796
JOBFIT <--- Fit	.862
CP1 <--- Aspirations	.804
CP2 <--- Aspirations	.737
JOBSAT <--- Satisfaction	.899
ORGSAT <--- Satisfaction	.733
CP5 <--- Aspirations	.459
WL7 <--- WLB	.444
WLB3_REV <--- WLB	.604
BARRIERS1_REV <--- Barriers	.338
Barriers2 <--- Barriers	.289
Barriers6 <--- Barriers	.747
WL1 <--- WLB	.802

Variables		Estimate
Barriers5	<--- Barriers	.762
ORGFIT	<--- Fit	.510
SelfE6	<--- Self Efficacy	.807

Figure 7 Final model



Notes: The numbers next to each path correspond to the respective hypotheses letter.

* $p < .05$, ** $p < .001$, ns not significant.

Since hypotheses i was negatively significant, in that, satisfaction was negatively related to career aspirations, the model was tested on the female game workers working in developmental roles only (N 320) and on the female game workers working in non-developmental roles only (N 130).

3.6.9 Developmental roles

For the women working in developmental roles within the games industry the model fitted the data well (see table 3.78 for the goodness-of-fit results).

Table 3. 78 Goodness-of-Fit (N = 320)

<i>df</i>	χ^2	χ^2/df	GFI	TLI	CFI	RMSEA
181	363.130	2.006	.901	.910	.922	.056

However, the regression weights revealed that hypotheses a, h and i were not significant (see appendix 3 for the table of estimates). Model modification was utilised, removing the three insignificant links (self-efficacy to career barriers, work life balance to satisfaction, and satisfaction to aspirations) however this did not improve the fit of the model (see table 3.79).

Table 3. 79 Goodness-of-Fit (N = 320)

<i>df</i>	χ^2	χ^2/df	GFI	TLI	CFI	RMSEA
185	374.312	2.023	.900	.908	.919	.057

3.6.10 Non-developmental roles

For the sample women working in the non-developmental roles, although all the links were significant, the model did not fit the data well. This could be due to the sample size. Although there is no standard criteria for sample size as it is conditional on the data and the model (Boomsma and Hoogland, (2001), it is suggested that a sample size under 200 may result in problems (Boomsma and Hoogland, 2001).

Table 3. 80 Goodness-of-Fit (N = 130)

<i>df</i>	χ^2	χ^2/df	GFI	TLI	CFI	RMSEA
183	310.468	1.697	.831	.867	.884	.072

3.7 Factor Analysis of the BSRI

A factor analysis was conducted with the 19 sex role characteristics of the short version of the BSRI⁴⁰. Principle component analysis found the factors loaded onto two main factors; which accounted for 52% of the variance (a third factor accounted for 7.8% of the variance and was therefore not included. The items that loaded on the third factor also loaded well on the main two factors).

⁴⁰ The short version of the BSRI has 20 characteristics, however for the current study the characteristic 'loves children' was omitted due to the study's focus on the workplace and the workplace of focus unrelated to working with children.

Table 3. 81 Total variance explained

Component	Total	% of variance	Cumulative %
1	5.502	28.959	28.959
2	4.401	23.262	52.121

Analysis of the component matrix with two components extracted is shown in table 3.81. Fourteen of the characteristics loaded more on the masculine component and five on the feminine component (see table 3.83). Of the fourteen characteristics that loaded onto component one, eight were masculine as in Bem's original study and six were considered by Bem as feminine. Of the five characteristics that loaded onto component two, only three were feminine in Bem's original study and two masculine (see table 3.82 for Bem's original masculine/feminine characteristics). Therefore, the characteristics of masculine/feminine in the current sample of women in the games industry are not the same as Bem proposed nearly forty years ago.

Table 3. 82 Bem BSRI original masculine/feminine scale characteristics

Masculine	Feminine
Independent	Affectionate
Defends own beliefs	Sympathetic
Assertive	Sensitive
Has a strong personality	Understanding
Forceful	Compassionate
Has leadership abilities	Warm
Willing to take risks	Tender
Dominant	Gentle
Aggressive	Soothes feelings
Willing to take a stand	

Table 3. 83 Component matrix female participants

<i>BEM Masculine</i>	Factor 1	Factor 2
Independent		.432
Defends own beliefs	.517	
Assertive	.561	
Has a strong personality	.612	
Forceful	.477	
Has leadership abilities	.593	
Willing to take risks	.504	
Dominant		.589
Aggressive	.406	
Willing to take a stand	.553	
<i>BEM Feminine</i>		
Affectionate	.485	
Sympathetic	.580	
Sensitive	.599	
Understanding	.606	
Compassionate	.684	
Warm	.630	
Tender		-.595
Gentle		-.638
Soothes feelings		-.542

Chapter 4: Discussion

This chapter will discuss the theoretical framework and the thesis findings. To make it easier for the reader findings will then be discussed in terms of the literature reviewed and follow a similar order; segregation in the games industry, age and generational differences, individual differences and the environment, identity in a male domain, the self in the workplace, career factors, life issues, and cultural variations.

The main aim of the thesis was to develop a model of career influences using Social Cognitive Career Theory (SCCT) by Lent et. al. (1994) as a framework. This was not to test SCCT hypotheses specifically but rather to explore expanding the range, usage and applicability of a SCCT framework (Lent and Brown, 2006). The thesis also aimed to gain a further understanding of women working in a male dominated work environment and a new industry. Within this thesis there are a number of hypotheses suggested (see section 1.13 for the hypotheses associated with the model and section 1.14 for the other study hypotheses) and each hypothesis will be discussed within this chapter with reference to the research literature discussed in the introduction and chapter 1, the literature review. Thus, the chapter will start with a summary of the main findings and will then move on to an in-depth discussion under the headings noted above.

4.1 Summary of the main findings

This study has provided details of women working in the male dominated, relatively new, creative industry of computer games development. A model of career influences, using and expanding the applicability of Social Cognitive Career Theory has been developed using structural equation modelling. Overall, the final model developed in the current thesis demonstrates how useful a SCCT framework can be for looking at career development issues of women already in careers. In particular the model illustrates how a SCCT framework is good for looking at the career factors that influence the career aspirations of women working in the computer games industry. Overall the model illustrates that individual and environmental factors influence the satisfaction and aspirations of women in a career. It would seem

person-environment fit is particularly important for women working in the computer games industry. Findings indicate that congruence with both job and organisation is important for the satisfaction and aspirations of women working in this creative and technological industry.

One of the key contributions of the model is that it provides a better understanding of how career factors (both individual and environmental) affect aspirational outcomes. To increase women's career development and career aspirations, self-efficacy, attitudes towards women's career barriers, work life balance attitudes, person-environment fit and satisfaction are all important factors to be considered. The model supports a number of hypotheses adding to the existing literature in a number of ways. For example, higher occupational self-efficacy results in higher workplace fit, person-environment fit and workplace satisfaction results in more positive/higher career aspirations. In addition, the model also contributes to the literature due to the models' uniqueness; unique in the models' expansion of using a SCCT framework to look at the career development of women already in a career. Furthermore, the study advances Social Cognitive Career Theory through showing its usefulness as a tool for women's careers and through its use in investigating the careers of women already in a career in terms of advancement and development, rather than career choice, as is often how SCCT is used. From a review of the literature, thirteen hypotheses (separate from the model hypotheses) were developed; of which this thesis supported ten, and rejected three. As demonstrated in the introduction, research on women working in the games industry is sparse. This study has given an insight into a sample of women who currently work in this male domain, in terms of their career attitudes, gender identity, person-environment fit, satisfaction, motivations and aspirations. A number of differences were found between participants, particularly between those working in the USA compared to those in the UK. The study has also been able to ascertain similarities and differences between this industry and the wider ICT and SET sectors, to which it belongs. These findings address significant knowledge gaps that exist surrounding women's career development in male dominated and new industries. Each of the points outlined above will now be discussed.

4.2 SCCT framework and the proposed model

Using SCCT as a framework, the current study was able to develop a career model of influences towards aspirations using structural equation modelling (SEM). The model that best fits the data in the current study highlights how SCCT can be utilised as a framework for understanding the career aspirations of women already in a career. The main concepts of SCCT; self-efficacy, environmental factors, outcome expectations, and goals are included in the model. SCCT is a situation specific theory which focuses on the connection of these factors which can influence an individual's career [choice]. What is critical to the success of the SCCT process is the extent to which the activity is viewed and the extent to which individuals feel they can become successful. The contextual factors come into play by influencing the individual's perception of the probability of success. If an individual perceives few barriers, the likelihood of success reinforces the career choice, or in the case of the current study; career aspirations and development, but if the barriers are viewed as significant there is a weaker interest, or, in this study, lower or less positive career aspirations.

The final model (figure 7) shows the variables that best fit the SCCT framework in looking at women's career influences for this particular sample data. A number of models were developed and other aspects considered, however, the variables included in the final model were found as being the best variables that both influenced career aspirations for the data set and are most in-line with a SCCT framework the thesis is based on. These variables were; occupational self-efficacy, attitudes towards women's career barriers, work life balance attitudes, person-environment fit and work satisfaction. Attitudes towards women's career barriers and work like balance attitudes were viewed as supports/barriers, whereas person-environment fit was viewed as an outcome of the supports/barriers as well as an environmental factor. Satisfaction was viewed as an outcome, with goals being an individual's attitudes towards career aspirations. The model may even be considered circular, in that, not only does higher self-efficacy influence higher career aspirations but higher career aspirations could result in higher occupational self-efficacy. This research helps organisational researchers understand more about the factors that can influence the careers of women working in male dominated industries, as well as looking at how variables relate and influence each other.

'Structural equation modelling simultaneously investigates relationships and provides both an overall assessment of the fit of a hypothesized model to the data and tests of individual hypotheses' (Turban and Dougherty, 1994, p 695). In light of the literature reviewed the current thesis used SEM to investigate the hypothesized model of career influences to aspirations as well as a number of individual hypotheses associated with it. All ten of the modelled research hypotheses enabled the model to fit the data, however three hypotheses were insignificant. Model modification was therefore utilised to gain best fit. Due to model modification; hypotheses c, d and f were subsequently not supported and rejected. Therefore, the final model supported seven of the ten hypotheses. For clarity, each of the model hypotheses will be discussed in turn.

According to the final model, in support of hypothesis a; for women in the games industry occupational self-efficacy had a direct impact on attitudes towards women's career barriers in that higher occupational self-efficacy resulted in awareness of, or acknowledgement of career barriers towards women's careers (.138, $p < .05$). This suggests that having more efficacy or competence enables women to overcome any barriers they face. In support of hypothesis b; occupational self-efficacy had a strong positive impact on person-environment fit (.848, $p < .001$). Higher occupational self-efficacy resulted in higher person-environment fit. As expected, higher efficacy resulted in a stronger feeling of fitting in. This supports Bandura's (1986) assertions that people will be attracted to jobs and organisations based on the extent to which they believe they can succeed. Therefore, individuals with higher self-efficacy will be more likely to value their subjective perceptions of fit more heavily when judging attraction to an organisation than individuals with lower self-efficacy (Bandura, 1986). Both findings emphasise the importance of self-efficacy in the workplace. Hypothesis c was not supported; occupational self-efficacy was not significant to attitudes towards work life balance in that higher occupational self-efficacy had no impact on attitudes towards work life balance. This finding suggests that competence has no impact on how you feel towards your work life balance, either positively or negatively.

Hypothesis d was not supported; attitudes towards career barriers did not significantly affect person-environment fit. This is a surprising finding as it was

expected that attitudes towards women's career barriers would affect women's workplace congruence. It was expected that a more positive attitude would result in more fit/congruence, however this was not the case and there was no relationship either positive or negative. Hypothesis f was also not supported; attitudes towards work life balance issues did not have a significant effect on person-environment fit as expected. Again a surprising finding that suggests fit and congruence with the working environment and job whatever the work life balance situation. In support of hypothesis e; person-environment fit was significantly related to satisfaction at work (.556, $p < .001$). Higher fit or congruence resulted in higher satisfaction, supporting previous findings (O'Reilly et. al., 1991). For women working in the computer games industry, person-environment fit was highly significant to satisfaction. In support of hypothesis g; women's attitudes towards career barriers were significantly related to satisfaction (.228, $p < .001$). Awareness of women's career barriers resulted in higher satisfaction. Despite negative attitudes towards career barriers to women's careers, women were still highly satisfied at work. This might suggest that career barriers can be overcome or it may be due to the barriers they encountered (Swanson and Woitke, 1997) or because a lot of the women that took part in the study were in senior roles (56%). Previous research has found opportunities for career advancement as an important determinant of job satisfaction (Shields and Ward, 2001), which these findings tend to support. In support of hypothesis h; female game workers attitudes towards work life balance issues were significantly related to satisfaction (.127, $p < .05$). Positive attitudes towards work life balance issues meant higher satisfaction at work. This could imply that gaining a suitable work life balance is important to satisfaction at work for women in the games industry. Indeed, Scandura and Lankau (1997) found the ability to combine family and work life was particularly important to the job satisfaction of female employees. It may be that balancing work and life is important to today's workforce (Blyton and Jenkins, 2007). In support of hypothesis i; satisfaction at work was significantly related to career aspirations (-.172, $p < .05$). However the relationship was a negative one in that; when satisfaction goes up, aspirations go down. This could mean that being satisfied is more important than career aspirations for women in this industry. In support of hypotheses j, person-environment fit was significantly related to career aspirations (.355, $p < .001$); congruence with the working environment leads to greater career aspirations. Therefore, although person-environment fit is important to satisfaction, fit is more

important to career aspirations than satisfaction. It seems that fit or congruence leads to wanting, or indeed having more positive/higher career aspirations.

It can be seen that the model supports a number of hypotheses, giving rise to a number of interesting findings and issues. For instance, person-environment fit was found as being both significant to career satisfaction and aspirations. Self-efficacy also impacted person-environment fit, however surprisingly attitudes towards women's career barriers and work life balance issues were not. It would seem that although gender may cause conflict for women working in male dominated occupations, women working in the industry are congruent with their roles and this is significant to both their satisfaction and their aspirations. Interestingly, the majority of the women in the current study had an androgynous gender identity. Powell et. al. (2009) suggest women become gender neutral as a coping strategy for working in male dominated environments. Perhaps women in the games industry have become, or are generally more androgynous which enables them to fit into the environment. It may possibly be that the industry attracts and retains women who have high androgyny since they need this to fit into the industry and work environment.

The model found some interesting yet surprising results with regards to satisfaction at work. The negative relationship between satisfaction at work and attitudes towards career aspirations is particularly surprising since it was expected that as satisfaction increased so would career aspirations. However, as satisfaction increased aspirations reduced. In order to try and gain some understanding of this result, further analysis of the model was conducted. The model was subsequently run on the data set of women who worked in the developmental roles only and on women who worked in the non-developmental roles only in order to investigate further to see if role had any impact on career aspirations and the model. The model did not fit the data well for the women working in the non-developmental roles only. The model may not have fitted the data for this group of women since the sample size was relatively small for conducting a SEM with less than 200 participants not considered an adequate sample size (Boomsma, 1982). Perhaps more interesting is that the model fitted the data for the women working in a developmental role only, yet satisfaction was not significantly related to career aspirations for this data set. Satisfaction is therefore not significant to, and therefore did not influence the career aspirations of women

working in the developmental, more creative and more technical roles within the industry, according to the proposed model. This may be an indication that actual role and the ability to be creative are separate to career aspirations. Women working in developmental roles did not view satisfaction as important to their aspirations, whereas person-environment fit was important for aspirations for all the women, no matter their role within the industry.

Attitudes towards women's career barriers and work life balance issues were significantly related to work satisfaction within the model no matter the role, yet neither was significant to person-environment fit. The findings add to the literature on satisfaction at work since satisfaction at work is therefore influenced by the outside work influences of both work life balance issues and attitudes towards women's career barriers. The influence and relationship of outside work influences is an area of job satisfaction viewed as needing research (Blyton and Jenkins, 2007). Although further research is needed, the findings do suggest a preliminary relationship. It seems person-environment fit is influenced by self-efficacy and person-environment fit influences satisfaction and aspirations. Whereas, satisfaction is influenced by person-environment fit, attitudes towards women's career barriers, work life balance issues and negatively influences career aspirations. Unlike the findings of previous research, satisfaction did not increase aspirations. This provides useful theoretical findings to career development researchers, as findings reveal person-environment fit proved more influential. This may also be an important finding for the computer games industry as it highlights the importance of fitting into your role and working environment of career aspirations for women working in the industry.

Theoretically, from the sample of women working in the games industry who participated in this study, it can be concluded that on the whole the SCCT framework tends to support other theoretical positions within organisational and vocational psychology (Holland, 1973; O'Reilly et.al., 1991; Scandura and Lankau, 1997; Sheilds and Ward, 2001; Lent et.al., 2001; Neufeld et. al., 2006). For example, the model supports previous findings that higher self-efficacy (in this case domain specific occupational self-efficacy) results in fit or congruence with the environment (Holland, 1973) and that higher fit or congruence is related to higher satisfaction

(O'Reilly et.al, 1991). In addition, the current model adds to the literature in a number of ways. For instance, self-efficacy or competence can result in the potential to overcome career barriers or reduce the impact of any barriers. This adds weight to Lent et. al.'s (2001) suggestion that higher coping efficacy was associated with the perception of lesser barriers, greater supports and more self-efficacy. Even if an individual has high self-efficacy for a career, positive outcome expectations and interest, they may still avoid that career if one perceives considerable barriers to attaining it (Brown and Lent, 1996). Competence can also lead to more fit or congruence with the working environment but not the ability to gain/achieve a work life balance. Attitudes towards women's career barriers and work life balance issues impacts satisfaction at work and satisfaction is related (negatively) to career aspirations. Surprisingly, despite attitudes towards women's career barriers and work life balance issues impacting satisfaction, they did not significantly influence fit or congruence with the working environment. The overall model has numerous theoretical implications. For instance, the model expands the usage and applicability of a SCCT framework to women's careers, especially in regards to career aspirations and development. The model also leads to a greater understanding of the many factors that can contribute to career aspirations using a SCCT framework as well as adding to the literature on satisfaction at work, career barriers, career aspirations, work life balance, person-environment fit and self-efficacy.

4.3 Segregation in the games industry

This section relates to H1, H2 and H3 respectively. All three hypotheses were supported and accepted. It is clear from the findings that women who work in the games industry, like other industries, are not a homogenised group. Women working in the industry differ in terms of both personal and professional attributes. This next section will discuss some of the ways in which participants differed and how these differences impacted on their attitudes as well as the psychological measures in the study.

4.3.1 Grade

Grade is an important issue for women in the workplace. Women tend to be concentrated in the lower echelons of industries; especially male dominated

industries (Thewlis et. al., 2004; Labour Force Survey, 2003; Faulkner, 2001). Grade yielded significant differences for the participants in the study. Previous research on women in the games industry yielded inconsistent findings with regards to seniority of women within the industry (Krotoski, 2004; Haines, 2004). In this thesis a significant difference was found between women in management grades and women in junior grades with regards to whether they felt there are covert barriers to women's achievement. Women in a junior grade felt there are covert barriers to women's achievement significantly more so than women in management grades. This could imply that since managers have progressed and achieved to a senior level within the industry, they do not view covert barriers as existing. After all, they have made it into management and thus proof that it is achievable.

Women in management positions also had a significantly higher feminine gender role identity than women in middle grades. This is a surprising finding since previous research suggests that in order to progress in their careers women need to adopt more masculine traits (Kawakami, et. al., 2000; Schein and Muller, 1992; Schein, Mueller and Jacobson, 1989; Willemsen, 2002). However, the WWW-ICT (2004) report found that women are often directed towards project management even if they prefer technical work, due to assumed interpersonal and organisational skills (more feminine skills). This may be one explanation for the findings. When looking more closely at the women in the current study, the two largest professional identities of managers was firstly 'other' (24%) which is the non-developmental (such as HR and administration) and academic roles and secondly, executives (20%) where it is unclear as to their actual role within the industry i.e. technical or non-technical. Therefore, the managers in the study may have been in more feminine roles within the industry which could possibly account for the difference.

4.3.2 Professional Identity

Professional identity is an important issue within the industry especially since participants can be categorised into two distinct groups, those employed in developmental, and traditionally more male dominated roles, and those in a non-developmental and traditionally more female dominated roles. A worker may not be a minority in an organisation, however they may be a minority within their occupation,

within that organisation (Taylor, 2010). Therefore, they will feel the cultural effects of working in a sex incongruent occupation. Thus, the sex composition of the occupational category regardless of the sex composition of the workers environment can have an effect on the worker (Taylor, 2010). Women in a developmental role are a minority in the industry, occupation, organisation, their team and their role is not traditionally congruent with their gender. Women working in the non-developmental roles within the games industry are minorities in the industry and organisation but may not necessarily be a minority within their team and are not minorities within their occupations. They may well work daily with other women and their role is traditionally feminine and considered more congruent with their gender. This is an important consideration when discussing the results of the thesis. There were a number of interesting differences between women in the games industry who work in a developmental role; which is a core creation and more technical role, compared to those in a non-developmental role, (non-technical). For instance, women in the developmental roles recognise, and are aware, that they, as women, are not well represented within their profession. This is understandable since women in the developmental and generally more technical roles are more under represented within the industry even more so than women in traditionally feminine non-developmental roles. A surprising finding however, was that, women in the developmental and male dominated roles were less androgynous than women in the non-developmental and more female areas of work. This finding is surprising since one might assume that since women are in a male dominated role they may become more androgynous and less gendered in order to fit into the male environment; in essence becoming gender neutral. Researchers have criticised female engineers who hide their femininity for not only failing to challenge the gendered culture of engineering, but because they also maintain an environment which is hostile to women (Powell, Bagihole and Dainty, 2009). It may be that women in the games industry are using similar strategies in order to cope in this male domain.

The industry has a wide variety of roles, requiring a wide range of skills. Roles include artists, coders, writers, designers and those in HR, administration and marketing. The study revealed a number of significant differences between the different professional identities within the industry. For instance, promotion was significantly more important to QAs than it was for writers and executives. For the

executives this might be explained due to the nature of their professional identity, as they are already senior and may therefore, no longer be looking for promotion or there is simply nowhere else to be promoted too. However, it is more difficult to explain the difference between QA's and writers. One possible explanation could be that becoming a QA is considered one way for avid gamers to get into the industry and once in, move into other roles such as coding, which is not the case for writers.

Executives were more satisfied than some of the other professions with a number of the satisfaction at work statements which tended to focus on autonomy, skills and the job they do. This seems reasonable since one would expect them to be, for example, more autonomous. Executives also had a significantly higher masculine gender role identity compared to artists/animators. This is interesting since it could suggest that women in a powerful executive position either adopt or naturally have more masculine characteristics than those in other areas of the games industry, especially those in the more creative, artistic roles in game development. This also tends to contradict previous findings of the study, that women in management had higher feminine gender role identity than women in middle grades. This could possibly indicate that for women to go into more senior management; executive level, they need to adopt masculine traits as suggested by Powell and Butterfield (2003).

There were also a number of differences between the engineers and the other professional identities. Engineers had less person-environment fit to some of the other professions on two of the statements – 'I am the right person for this type of work' and 'my personality is a good match for this job'. Engineers also had less satisfaction at work than executives. This finding is interesting, since it could be argued that engineering is perhaps one of the more masculine dominated roles within the games industry; with only 2.4% of participants working in engineering. It could therefore be the case that female engineers do not fit in as well and are less satisfied than some of the other professional identities due to this predominance of masculinity, within not only the organisation, but the professional identity of engineers as a whole. Previous research looking at female engineers has found a double-bind effect to exist; where feminine women engineers are viewed as incompetent and competent women engineers are viewed as unfeminine; instilling the male norm (Faulkner, 2007). This double-bind effect could be in play for the

female engineers working in the games industry. Further exploration is needed. Androgynous gender role identity yielded one significant difference between the professional identities. Writers had a significantly lower androgynous gender role identity than women in a developmental profession, artists/animators, coders and designers. This may indicate that writers in the industry are less gendered or more gender neutral than some of the other professions.

4.3.3 Game play

Eighty two percent of the participants played computer games in their leisure time and further analysis revealed that players were evenly represented across the professions. The findings that women who do not play computer games in their leisure time, can have a career within games and a strong desire to progress within the industry, is an important one. According to Consalvo (2008), some women (and men) may be put off, or not even consider a career in the games industry if they are not avid or hard core gamers. Therefore, highlighting these findings could be of value to the industry in terms of recruitment. On the other hand, the findings that women who do not play games in their leisure time value promotion and intend to climb the career ladder significantly more than women who do play games in their leisure time, could indicate that having a 'passion for games' means promotion is not as important as the actuality of making games or perhaps being part of the industry. It is this 'passion', which according to Consalvo, could be helping to maintain unsavoury work practices such as long hours and the lack of flexible working within the industry. Maybe this is a strategy to fit in, rather than challenge the working culture, which would support findings found with female engineers (Eisenhart and Finkel, 1998; McIlwee and Robinson, 1992; Powell, Bagihole and Dainty, 2009).

There were also significant differences between the women who played and those that did not play computer games for leisure and attitudes toward women's career barriers. Women who played games for leisure disagreed significantly that there are no covert barriers to women's achievement than women who did not play computer games. Perhaps suggesting that, despite their 'passion for games' women still recognise the barriers within the male dominated industry. Women who played computer games for leisure also disagreed that women are well represented in their

profession, thus, recognising their minority status within the industry. These differences may also be a reflection of women's minority status as both female gamers and game workers.

4.4 Age and generational differences

This section relates to H4. Previous research has found that there is a predominance of young people in the ICT industry (Griffiths et. al., 2007; Platman and Taylor, 2004). Over two-thirds (67%) of women in the current study were aged 35 or under. This supports previous findings that game workers tend to be young (Deuze et. al.'s, 2007) as well as supporting hypothesis 4 in the current thesis. Age had a significant impact on the gender role identity of women in the industry. Women in the study 36 and over had a significantly more masculine gender role identity than women 35 or under. This finding could perhaps suggest that as women get older they become more masculine at work or that the masculine work environment has had more of an impact on women as they have aged. However, this is in contrast to Hofstede's 2001 study which found masculinity decreased with age. Surprisingly, the length of time participants had worked in the industry had no significant impact in terms of age. Maybe older women who are attracted to the industry have a more masculine gender role identity before entering the industry. Women aged 36 years and above also agreed more strongly with the work life balance statement 'awareness of work life balance policies needs to be improved' and the career progression statement 'to be recognised in my field is important to me'. This age difference may be due to the majority of participants in the study not having children. Perhaps the older participants are or would consider motherhood if they felt they were supported in the workplace. With regards to being recognised, perhaps this is more of an issue as one ages.

Generational differences are particularly relevant for the games industry since the industry is itself a relatively new industry of approximately three decades, and appears to attract a younger workforce (Deuze et. al., 2007). Although the age ranges in the current study are slightly different from the generational ranges described previously, the majority (69%) of participants are generation Xers (aged 26-45), with 22% generation Yers (aged 18-25) and only 9% from the boomer generation (aged 46

plus). Previous research has found differences between the generations; in particular with regards to attitudes towards work life balance and work values and ethics. Analysis between the generations did not yield any significant differences. However, when looking at the mean scores between the generations, a number of interesting differences can be observed and are worth mentioning. For instance, generation Y women had the lowest mean score for job fit and job satisfaction. This is particularly surprising since this is the generation that was born into and brought up with technology and the digital age. This generation also had the lowest mean score for intrinsic motivation but the highest for extrinsic motivation. Again, this is surprising, especially the lowest intrinsic motivation since you might think this generation would have more passion for games since they grew up with computers and computer games. Boomers had the highest mean scores for job and organisational fit, and job and organisational satisfaction. One might expect the older generation to have the lowest mean scores especially in terms of fit and satisfaction, since they were the only generation of the three that did not, or had very little encounter with computers and computer games when they were young. Generation Yers had the lowest mean scores for self esteem and self-efficacy; which could relate to them having the lowest fit and satisfaction scores. Whereas, generation X had the highest mean scores for both. However, generation Xers had the lowest means for organisational fit and satisfaction. Further exploration of generation differences in male dominated industries warrants further exploration.

4.5 Individual differences and the environment

This section relates to H5, H6 and H7 (respectively). All three hypotheses were supported and accepted. Career motivation, person-environment fit and satisfaction at work are all important constructs when looking at the career and career development of women. This section would like to discuss some of the significant differences found with regards to these three constructs and women working in the games industry.

4.5.1 Career motivation

It has been suggested that women place less importance on career attributes associated with senior/management roles such as money, prestige, advancement and

power (Eddleston et. al., 2006). However, results from this thesis would suggest women in the games industry differ. The female game workers in the current study were highly motivated by both external (extrinsic motivation) and internal (intrinsic motivation) rewards, indicating women in games do place importance on money, prestige etc. as they do to internal rewards. Interestingly, intention to stay in the industry in five years time had no significant effect on work motivation. This is an encouraging, yet perhaps a surprising finding, since even for the women who do not wish to remain in the games industry they are still highly motivated. This is especially surprising with regards to intrinsic motivation as one would expect the 'passion for games' and internal motivations to be impacted if an individual intended to leave the industry (any industry not just the games industry).

Analysis revealed significant differences for motivation between intrinsic motivation and a number of the studies variables (no significant differences were found between the study variables and extrinsic motivation). With regards to country of work, participants in the USA had significantly more intrinsic motivation than participants in the UK. The reason for this difference needs further exploration. Women in a developmental role had more intrinsic motivation than those who worked in a non-developmental role. This is important as despite the games industry being viewed as a male domain, women are still intrinsically motivated by what they do. This finding adds weight to the 'passion for games' premise put forward by Consalvo (2008). This implies that women working in the more technical areas of the industry are more intrinsically motivated than women who work in less technical areas. Therefore, women in more male dominated areas are more internally rewarded than women in female dominated areas. This is important for encouraging more women to move into male dominated occupations.

Willingness to relocate also had a significant impact on intrinsic motivation. Participants not willing to relocate had more intrinsic motivation than those that were willing to relocate. An explanation for this could be that due to the high intrinsic motivation, participants did not feel the need to relocate, whereas participants with less intrinsic motivation perhaps did. Previous work on intrinsic motivation suggests individuals who are intrinsically motivated become involved, committed and

energised by their work (Thomas, Jansen and Tymon, 1997). It would appear this was the case for the women in this thesis despite the differences.

4.5.2 Person-environment fit and workplace satisfaction

This section will discuss the findings of both person-environment fit and satisfaction together, as both measures look at both job and organisational aspects. The majority of female game workers in this thesis had high job fit (84%) and slightly less had high organisational fit (67%). The majority also had high job satisfaction (87%) again with slightly less having high organisational satisfaction (71%). Therefore, participants had higher job fit and job satisfaction compared to organisational fit and organisational satisfaction. Suggesting that, for female game workers, despite being satisfied and congruent, they are less so with their actual organisation than with their job. This is interesting since it could be argued that it is the male dominated culture that persists at the organisational level that women are most dissatisfied and least congruent with. If women are satisfied and feel they fit well into their chosen job, then perhaps the responsibility lies more at the organisational or perhaps the industry level to understand how to better accommodate female employees and adapt to their needs. More research is needed in general to clarify why participants were less satisfied and less congruent with their organisation compared to their job and how this may affect the industry. More research is also needed to understand more about the organisational culture across the industry especially cross-culturally and to understand if factors such as; the size of the organisation or the game genres that are developed have significant impact on employees and the working environment. The high levels of job satisfaction found with participants in the games industry is in contrast to the low levels of job satisfaction Rose (2007) found with ICT professionals. Perhaps a passion for games does persist within the industry as Consalvo (2008) suggests, after all participants were satisfied with their jobs despite their general negative attitude towards women's career barriers and the acknowledgement of workplace factors such as long hours.

Further analysis revealed that whether or not participants intended to stay in the games industry in five years time had a significant impact on both person-

environment fit and satisfaction at work. This confirms previous findings that person-environment fit is related to job satisfaction and intention to stay (O'Reilly et. al., 1991). This is important for the games industry, since theoretically environments will recruit and retain people whose characteristics are congruent to the working environment and people will prefer and persist in environments that are congruent with their vocational personalities (Gottfredson and Duffy, 2008). Lack of opportunities, not enough work life balance and bad working atmosphere were all reasons for women wanting to leave the industry. Reasons which perhaps suggest organisational rather than job level issues are to blame.

As previously stated, satisfaction at work has been associated with a number of employment factors such as commitment and intention to leave an organisation or job (Perryman, 2004). As expected, women who intended to stay in the industry had more fit and satisfaction. Intention to remain within the industry is an important issue for the games industry since there has been acknowledgment there is a skills shortage within the industry (Wilson, 2009; Jefferey, 2007⁴¹). Intention to stay is also important in terms of retention issues within the industry. However, the findings do not make it clear if the female game workers intended to remain in their specific jobs, organisations or countries within the games industry. This further information would be valuable given that the Oxford Economic (2008) report suggests the UK games industry is being poached for workers for their skills and knowledge by other gaming countries. If this is the case, this could be detrimental for the future of the UK games industry. It is also interesting that participants from the USA had significantly more job fit than the participants from the UK. However, there was no difference between the women's country of work with regards to organisational fit or job or organisational satisfaction.

4.6 Identity in a male domain

This section relates to H8 and H9. According to Butler (1990), gender is socially constructed and something we do rather than something we are. The current study wanted to look at the gender role identity and gendered identification of women working in the male domain of the games industry. This would hopefully provide a

⁴¹ Accessed August 2008 http://www.skillset.org/skillset/press/releases/article_6286_1.asp

further understanding of women in male dominated occupations and industries. A factor analysis was conducted on the Bem Sex Role Inventory (BSRI) for H10 (see section 4.6.1) however for the purpose of analysis Bem's original factors were used for comparisons with other research. In general, women in the games industry had low gender identification at work; supporting previous research looking at the gender identity of women in the wider ICT sector (Griffiths, Moore and Richardson, 2007). Thus, H8 is supported and accepted. According to Griffiths, Moore and Richardson, one strategy used by women in ICT to cope with their minority status is to make their gender identity invisible. This appears to also be the case in the new, yet male dominated industry of computer games. However, it is unclear from the findings as to why participants had low gender identification and whether it was to make their identity invisible or there was some other reason for the low gender identification found. Schmader's (2002) research is relevant here. Schmader found that individual differences in gender identification moderated the effects of gender identity relevance on women's but not men's maths performance. Women with high levels of gender identification performed worse than men, but women with low levels of gender identification performed equally to men. Schmader concludes that, when faced with threats to their social identity, individuals who are highly identified will engage in behaviours to protect that identity. This research suggests that women who feel they must act as representatives of their gender are motivated to perform better on tasks than women who are not as closely identified with their gender. Recent research by Derks et. al. (2010) suggests that the queen bee⁴² phenomenon is a consequence of gender discrimination for women in senior roles who have low gender identification. Derks et. al. argue that due to a low identification with their gender, some women enhance their own career success through emphasising how they differ from other women, the stereotype of women e.g. '*other women are less career orientated than men*' (p3). These reasons could be plausible explanations as to why women in the computer games industry have low gender identity in this work domain.

With regards to gender identification, the only significant difference was between participants working in the developmental roles in the USA and the UK. Participants in the USA had higher or stronger gender identification than those in the UK. This

⁴² Queen bee is a term used to describe women's reluctance to support other women of lower ranks achieve career success.

may well indicate that women working in a development role within the UK games industry feel a stronger need to make their gender invisible than their American counterparts. It could perhaps be that women in the USA are more comfortable and perhaps more confident in showing their gender identity in this male dominated workplace. This may perhaps indicate cultural differences of working in male dominated industries and their impact. Findings from this thesis tend to lend weight to the notion that one strategy, possibly used by women in ICT industries, is to abandon their gender identity and femininity in the workplace. More research into why women have this low gendered identification in the workplace is needed within the area of ICT, the games industry and other male dominated organisations generally.

In terms of gender role identity, the majority of the women in the thesis did have a high masculine gender role identity. However, participants also had a high feminine gender role identity, which, according to the BSRI, equals a high androgynous identity. Therefore, although women had a high masculine identity, H9 is still rejected as participants scored highly on both masculine and feminine identity and therefore actually have a high androgynous identity. According to Wajcman (2007) women in ICT industries forsake their femininity, exchange aspects of their gender identity for a masculine version. Findings here suggest that women within the games industry do not forsake their femininity, or indeed solely adopt a masculine one, but rather they have or they adopt a more androgynous identity. This perhaps indicates that women in the industry are not gender specific. Adopting an androgynous identity may be one strategy women in the games industry use in order to become gender neutral or gender invisible. Having an androgynous identity also lends support to the finding that women in the industry have low gender identification since; they are not identifying more strongly with either a masculine or feminine gender role identity. Bem suggests high gender typed individuals are uncomfortable performing cross gender tasks since it is incongruent with their gender role orientation. Maybe women working in games feel more comfortable in the male working environment by being gender neutral as previous research suggests is one coping strategy women employ (Powell, Bagihole and Dainty, 2009). The findings could also suggest that women may be keeping their femininity as well as adopting a masculine one in order to fit in, whilst still retaining an element or elements of their femininity. It may possibly be

that the industry attracts and retains women who have high androgyny since they need this to fit into the industry and work environment. According to Powell and Butterfield (2003) there is an incongruity between women's gender identity and managerial roles, making femininity less applicable in the workplace. More research into the identity of women in this and other male dominated working environments would be valuable in understanding women and any coping strategies developed or utilised when they are in a minority. It would also be beneficial to see if their identity is situation specific.

Peng's 2006 Taiwanese study suggests that social change takes place in gendered occupations. For example, in a drive to appear less 'cold' Peng noted that the Taiwanese police changed their logo to a dove, rather than a symbol that is tough, and masculine such as an eagle. Peng suggests that the police not only outwardly promoted a 'softer' image but that the police themselves internalised this image. This is interesting in light of this thesis since the participants are in a masculine dominated environment one would expect them to identify themselves as more masculine in the workplace especially since the image of the games industry and computer games are in general, predominantly viewed as masculine. However, women in the study seem to be neutralising their gender identity which could be reinforcing rather than challenging the gender stereotypes that exist (Powell, Bagihole and Dainty, 2009). Significant differences with regards to masculine identity were found between participants in the USA and the UK, and also between those aged 35 and under and 36 plus. Women in the USA had a stronger masculine identity, as did older participants (those aged 36 and over). Reasons for these differences in masculinity could be culturally related for the differences between the USA and UK and perhaps generationally related for the age differences. Hofstede (2001) found masculinity decreased with age which does not appear to be the case here. Both areas would benefit from further research.

Analysis revealed a number of significant correlations between gender role identity and some of the other measures in the study. Masculinity has been found previously to correlate strongly with both self- efficacy (Long, 1989) and self esteem (Whitley, 1988). In this thesis, masculine gender role identity correlated with a number of measures; self-efficacy, self esteem, job and organisational fit, intrinsic motivation,

job and organisational satisfaction and gender identification. Whereas, feminine identity correlated with; organisational fit, intrinsic and extrinsic motivation, job and organisational satisfaction and gender identification. Therefore, masculinity correlates more with self-efficacy and self esteem, whereas femininity correlates more with motivation. These specific differences between the two gender role identities are particularly interesting, with masculinity associated with higher competence (self-efficacy) and value (self esteem) at work and femininity not. This may suggest that women need to have masculine traits in order to be competent and valued in the male domain of work or in this male dominated industry. What is surprising is that femininity correlates with extrinsic motivation (external rewards) since it has been suggested men value external rewards more than women (Eddleston et. al., 2006). Further exploration is needed to see if it is the industry that attracts certain types of women or if the women who enter the industry have to adapt themselves to the working environment to fit into in order to succeed, as has been previously suggested is the case in the wider ICT industry (Griffiths, Moore and Richardson, 2007). Pickard and Strough (2003) found people bring their previous experiences, expectations and beliefs regarding gender into a social context and adapt their behaviour accordingly. Perhaps the women in the games industry do this, knowing the industry is male dominated. However, more women in the industry may not necessarily mean the male discourse of games will be eroded. As social identity theory suggests, women do not want to be in the out-group therefore they utilise the masculine and push out feminine gender identities and reinforce the image of games as masculine. The current findings suggest an element of this may already be happening within the industry.

4.6.1 Factor analysis of the BSRI

With regards to H10, factor analysis results of the BSRI found that although the 19 characteristics loaded onto two components; masculine/feminine, the loadings differed from Bem's 1974 original study. This could indicate that for women working in the male dominated industry of computer games, the characteristics of what constitutes masculine and feminine have changed since Bem's original study over 35 years ago. This is an interesting finding and leads to a number of important questions with regards to the validity and reliability of the BSRI in today's society. It would

seem that the two sex roles are beginning to merge. Two of the characteristics: affectionate and forceful loaded similarly for both components. Therefore, it could be that these two characteristics are no longer needed in the BSRI when looking at women in the workplace. In earlier research, Holt and Ellis (1998) validated all but two characteristics of the long version of the BSRI. Neither of the characteristics that Holt and Ellis were unable to validate are included in the short version of the BSRI, used in the current study. It would appear that what is considered feminine includes traditionally feminine characteristics such as gentle and tender but also includes what are often viewed as traditionally masculine characteristics; aggressive, independent and assertive. The masculine component was found to include a number of traditionally feminine characteristics such as warm, compassionate and understanding, as well as traditionally masculine traits of having leadership abilities, willing to take a stand and willing to take risks. Perhaps participants are adopting some of the masculine attributes required for the workplace setting as suggested by Cejka and Eagly (1999). It may also be that participants are trying to assimilate to the dominant culture as Kram and Hampton (1998) proposed. Another reason could be the combining of technical and traditionally female skills viewed as a way forward for women to adjust to working in male work cultures without them compromising their gendered identity (Guerrier et. al., 2009). Therefore H10 is accepted as the gender role characteristics for women in the games industry were different from Bem's 1974 original study.

Cejka and Eagly (1999) examined the extent to which people believe that success in occupations dominated by one sex requires personal characteristics typical of that sex. So that, female dominated occupations require stereotypically feminine attributes and male dominated masculine attributes. This could account for why more of the characteristics for women in the current study loaded on the masculine rather than the feminine component. Therefore, if we take into account Eagly's (1987) social role theory, that men and women develop different traits because they enact roles within society which require those traits, then women working in male dominated domains, whether that be industry, occupation or team, will develop the traits for that role; in this case, masculine traits in order to fit in to the working environment. This certainly seems to be what is happening, with not only the women's BSRI scores but also the factor loadings. According to Diekmann and Eagly (2000) the BSRI should be

changing more from feminine to masculine than masculine to feminine due to women's increase in the paid labour market. Diekmann and Eagly (2000) found that women now, more than in the past, were perceived more masculine and women will in the future be more masculine than women at present. Feminine characteristics were seen to decline in women rather than increase in men. Therefore, stereotypes can be dynamic forces which can serve social change (Diekmann and Eagly, 2000). It might also be construed that women are becoming more like men in order to fit into the male domain of paid work.

When looking at the validity of the BSRI and comparing the findings across studies the methodology used within studies should be taken into account. According to Powell and Greenhaus (2010), more than a thousand studies have used the BSRI. Although it is not possible within the scope of the current research to look at all, or even a large percentage of these studies, it would appear that a large majority of studies have used a student sample. Indeed, Bem's (1974) original sample was a student sample. Some notable exceptions relevant to the current research include Long (1989) with a study sample of women in numerous male and female dominated occupations, Peng (2006) with sample of male and female college students, police officers, nurses and managers and Powell and Greenhaus (2010) whose sample was male and female managers. Therefore, the current study adds to the paucity of research using a non-student sample of the BSRI. This does however make the current study more difficult to compare to other studies findings which have used student or other populations.

Another methodological consideration is that of cultural differences. The majority of studies, with the obvious exception of those investigating the cross-cultural validity of the BSRI, are studies using American populations. Again this thesis differs and makes it difficult to compare, as although this thesis has a high population of American participants (42%), 30% were from the UK and the remaining 28% were from an international sample including Canada, Australia, and other European countries. The sample is therefore an international sample and it may prove fruitful for future research to look at any differences between countries whilst controlling for other variables such as gender, age and occupation in order to see how the characteristics load differently or similarly. Age is also an important issue when

considering the validity of the BSRI. As mentioned, the majority of previous study participants using the BSRI were students, predominantly undergraduate students, which therefore tended to have a mean age in the early 20's, whereas the studies of different occupations have much higher age means i.e. Long (1989) M=38 yrs and Powell & Greenhaus (2010) M=37yrs. The majority (47%) of participants in the current study were aged 26-35. Although the age of participants is predominantly young, they were slightly older than the studies with student populations. Future research might want to consider looking if there are any generational differences with regards to the validity and reliability of the BSRI.

It would seem that the BSRI has changed in recent years since Bem's original study for women working in the male dominated computer games industry. Therefore the findings from this thesis support the findings of other research on this measure, such as Ozkan and Lajunen's (2005) who found from a Turkish sample that masculine characteristics are desirable in women. The BSRI is still a widely used inventory for gender role measurement. However, it would appear that further research is necessary on the scale. It would be valuable for future researchers who use the scale to conduct factor analysis's of the scale using different study populations. It is not intended that new scales be developed, but rather look at how studies are conducted and utilise the BSRI for validation purposes. This may enable the scale to develop in terms of the characteristics that are perhaps more relevant for today's workforce and society. The factor analysis conducted in this thesis may form as a good starting point for developing the BSRI and determining what the characteristics are that are important for women currently. For instance the factor analysis results may indicate that the scale only measures one component; masculinity. It could also be as Zhang et. al. (2001) suggests that perhaps the short version measures gender role orientation rather than masculinity and femininity.

4.7 The self in the workplace

This section relates to H11. Self-efficacy and self esteem have been viewed as distinct but related concepts (Hogue, DuBois, and Fox-Cardamone, 2010). Correlations revealed the two concepts correlated strongly supporting this view. The majority of female game workers in the current study had both high self esteem at

work and high occupational self-efficacy. Supporting H11 and suggesting that women who work in the computer games industry have competence and confidence in their ability at work. Previous research has found women in male dominated occupations have higher self-efficacy (Chang, 2003) and women in solo status perform better on masculine tasks (Fuegen and Biernat, 2002) which may account for the high competence and confidence. However, although the women in the thesis worked in a male dominated environment, it is unclear how many are in minority within teams for example and how many experience solo status. The study findings also tend to support Long's (1989) view that women in male dominated organisations and industries need high self-efficacy in order to cope with the male dominated environment. In contrast to other findings which suggest women lack confidence in computers (Natale, 2002; Michie and Nelson, 2006).

Self-efficacy is important in the workplace for both men and women. Once in a job, negative beliefs about your abilities may reduce your willingness to take risks and reduce the desire to be visible; both of which can hinder career progression (Heliman, 1983). Again country of work revealed significant differences with female game workers in the USA having significantly more occupational self-efficacy and self esteem at work than those in the UK. These findings may have a significant impact on the careers of the women in the two countries; especially since self-efficacy has previously been associated to people's careers (van Vuuren, de Jong and Seydel, 2008) and more recently to pay expectations (Hogue, DuBois, and Fox-Cardamone, 2010). Participants not willing to relocate also had more self-efficacy than those who were willing to relocate. One plausible explanation for this could be that, since participants feel competent, they do not feel the need to relocate. This could be an indication that high self-efficacy can lead to a reluctance to relocate or perhaps a reluctance to change. Both self-to theories highlighted previously in the literature review suggest that self-image and identity construction are important in choosing a profession. Therefore, it could be that women with a higher self-image are more likely to choose a career in a male dominated sector due to the apparent benefits of working in these sectors i.e. pay, status, autonomy (Hogue, DuBois, and Fox-Cardamone, 2010).

4.8 Career factors

There was no hypothesis relating to career barriers and progression. Nevertheless, findings revealed both important areas for discussion. For the majority of participants in the study, promotion was important to them and they felt that they were progressing in their careers. This is despite the fact that a third (33%) of participants had not been promoted in the past five years. Just over half (59%) of the participants intended to climb the career ladder and were prepared to make personal sacrifices in order to do so, and nearly half (46%) of the participants felt that there were not enough opportunities for them to progress in their career. Furthermore, to be recognised in their field was important to nearly all the participants in the study (91%).

Further analysis revealed a number of significant differences between women in the games industry and their attitudes towards women's career barriers and career progression. For example, climbing the career ladder was significantly more important to participants who intended to stay in the games industry in five years time compared to those that did not. This may possibly suggest a commitment to the industry and therefore perhaps more of a desire or need for progression. Participants that did not play computer games in their leisure time also intended to climb the career ladder significantly more than participants who did play computer games in their leisure time. This may indicate that for these participants, it is not necessarily a passion for games but a passion for their careers and career progression which drives them. As highlighted previously in this chapter, it appears you do not need a passion for games to be successful in the industry. Also, participants with children intended to climb the career ladder and make personal sacrifices more so than participants without children. This is interesting and may reflect the personal sacrifices women with children in the industry may feel they need to make in comparison to women without children. Women who intended to stay in the industry in five years time felt they were progressing in their careers significantly more than women who did not intend to stay. This feeling of progression could be an explanation as to why the participants intended to stay in the industry and why some did not. To be recognised in their field was impacted by age, with older participants (36 and over) viewing it more important than younger participants. There are a number of plausible

explanations for this finding. For instance, maybe wanting to be recognised within your field develops with age or is perhaps a generational difference. Maybe women want to get more out of their jobs and careers, in terms of recognition as they get older. Or perhaps women aged 35 or under are not expected to be recognised within their field yet and as such it is not such a pressing issue to them.

With regards to career barriers, findings were contradictory. The majority (72%) of participants agreed that the glass ceiling exists, yet an equal percentage agreed that there were no covert barriers to women's achievement, possibly indicating the barriers are overt. Nearly all participants (94%) agreed that some careers are more female friendly than others. Just over half (53%) disagreed that women were well represented in their organisation; still the majority (76%) felt that women were not well represented within their profession. Suggesting that there are women within the organisation but less in the professions, reflecting that the majority of participants were in a developmental role within the industry where there are fewer women. In general, women had a negative view of the career progression of women and recognised that barriers exist, despite feeling they themselves are progressing within their careers. This could be one possible explanation why participants had less fit and satisfaction with their organisation compared to their jobs. ICT organisations have been found to have a flat structure with little hierarchy. Flat organisations lead to an informal working environment but career ladders can be short or nonexistent (WWW-ICT, 2004). A lack of formal structures and progression processes can make it particularly difficult for women to gain advancement. Women tend to achieve better in organisations where career paths are clear (Wickham, Collins, Greco and Browne, 2008). More understanding of the organisational structures especially with regards to progression and advancement would reveal more of the barriers and supports women have within the industry and perhaps lead to changes being made where appropriate.

4.9 Life issues

This section relates to H12 and H13, both of which are rejected. Work life balance issues are important issues when looking at the careers of women. It has been suggested that the ICT industry needs to broaden its appeal to a more diverse

workforce through such changes as making part-time work and flexible working more accessible (Griffiths, Moore and Richardson, 2007). The majority (79%) of participants did not have children and children had little impact on the psychological measures in the study. Analysis of participants with and those without children yielded no significant results for any of the overall measures in the study. With regards to participants marital status, a slight majority (35%) were single (31% lived with a partner and 28% were married). This supports findings from research in the wider ICT industry; that women with families are lacking within the sector (WWW-ICT, 2004) and that the games industry tends to favour single people (Deuze et. al., 2007). This could however, be due to the age of participants, as highlighted earlier, the majority were aged 35 or under.

A long hour's culture appears to exist in the games industry with just over three quarters of women (77%) reporting a long hour's culture in their organisation. Yet only 32% reported they worked 46 plus hours in an average week. However, despite this long hour's culture, only a third (33%) of participants were unhappy with their current work life balance (perhaps these were the participants who worked 46 plus hours per week, since the percentages are similar). However, it is not clear how many hours per week participants would do in crunch time. This is perhaps an oversight of the study and would have provided valuable information when discussing long hours within the industry. In general, participants had a positive attitude towards their work life balance. Long hours and crunch time are important issues within the games industry and reducing their impact on employees would be beneficial to the industry. Crunch time could be difficult to eradicate completely due to restricted budgets, last minute problems and deadlines. A possible solution could be for organisations to incorporate project management training for leads and managers, to yield greater effectiveness of project timelines and targets. Through more effective project management employee work life balance may possibly be enhanced. It is suggested that the long hours associated with the games industry become perceived as 'occasional', as they would often be in many professional roles, as opposed to 'regular'. Whilst individuals who have a passion for games and gaming enjoy their jobs as the study suggests, there is a growing recognition that achieving a work life balance is of greater importance for many individuals. Women who are the primary carers of children, generally require predictability (mainly regular hours) in order to

plan childcare. Improvement in working conditions may lead to women choosing to remain in the industry (for example, after starting a family), a benefit of this would be that having a greater number of women in games development may also have the added benefit of enhancing the image of the games industry as a potential career for women. Despite the positive attitude towards their current work life balance, half did feel the number of hours they worked affected their personal relationships and nearly half felt the number of hours affected their personal health. To help achieve better work life balance more flexible working practices should be encouraged. It is possible that as the women currently in the industry age the industry may see more families in it and may need to adapt in order to retain those women.

Promotion issues and working hours were found to be significant in two ways. Firstly, promotion was significantly more important for participants who worked 46 hours plus per week compared to those who worked 45 hours and under. Secondly, promotion was more important to participants who worked part-time compared to full-time. For participants who worked 46 hours plus this may indicate that women within the games industry view promotion as associated with long hours and hence why they do the longer hours. This is especially important if we consider that the games industry and the wider ICT industry has an image of long hours. Maybe women expect to have to work longer hours in order to succeed. It is interesting that part-time workers view promotion more importantly than full-time workers. Research indicates that part-time workers are often penalised in terms of career progression and promotion (Webber and Williams, 2008). Overcoming the penalties of part-time working could be the reason why participants viewed promotion as being important to them. The wider ICT industry has been criticised for the lack of part-time work available (WWW-ICT, 2004; Diamond and Whitehouse, 2007). The majority of participants in the current study did work full-time (88%) which may suggest that within the games industry there is either a lack of part-time work available, it is not utilised by employees, or that the women in the study did not require part-time hours; possibly due to the lack of women with children in the study.

4.10 Cultural variations

Due to the nature of the studies sampling methodology, it was deemed important to look at participants in terms of the country in which they work. This will gain some understanding of any cultural variation/differences that may exist within the industry. The majority of cultural differences lay predominantly between women in the UK and those in the USA (these two countries also represented the two biggest groups of participants in the study, 134 and 189 respectively). Women in the USA have significantly more occupational self-efficacy, self esteem at work, job fit, intrinsic motivation and have a more masculine gender role identity at work than their counterparts in the UK. Women in the USA also had significantly higher masculine gender role identity than women in Australia/New Zealand. All of these findings have been discussed at length previously in this chapter within the appropriate sections.

Women in the USA also had a more negative attitude towards women's career barriers. Women in the USA viewed the glass ceiling to exist significantly more than women working in the UK, and that some careers are more female friendly than others. They also felt that there were covert barriers to women's advancement in the workplace significantly more than women in the UK. This negative attitude towards career barriers of women from the USA participants is despite the fact that the USA participants had significantly more occupational self-efficacy, job fit, intrinsic motivation and self-esteem at work than their UK counterparts. Women in the UK believed that women are well represented in their profession significantly more than their USA counterparts did. This is interesting since evidence suggests women are underrepresented in all professional identities across the games industry in both the UK (Skillset, 2006 and 2009) and the USA (IGDA, 2004). With regards to the 'other' countries in the study, women in the 'other' category which included participants from Japan, India, Singapore and South Korea, agreed significantly more to the statement-'equal opportunities legislation means there are no barriers to women in employment' than women in the UK, USA and Canada. Women in Australia/New Zealand agreed significantly more to this statement than women in the USA. Perhaps women in the 'other' countries have a more optimistic view of equal opportunities legislation making a difference to women's employment opportunities and

eradicating barriers. Women working in the games industry in the 'other' countries category also felt more strongly that women were well represented in their profession than women working in the rest of the countries in the study. It is possible that women are more represented in the games industry in 'other' countries and more research is needed to elaborate on this.

The Bem sex role inventory (BSRI) revealed a number of cultural differences; again predominantly between women in the USA, UK and also Australia/New Zealand. Women in the USA had significantly more masculine gender role identity at work than their counterparts in the UK and Australia/New Zealand for this sample population. It may be that in the USA as opposed to the UK and Australia/New Zealand, women who choose to work in games are more masculine or they may have become more masculine from working in the industry. Furthermore, the differences may be due to the BSRI itself; since the only BSRI measure used in the study was a short version of Bem's original American version. This may in some way have biased the results for the USA women in the study. A number of studies have looked at the cross-cultural reliability and validity of the BSRI measure (Katsuranda and Sugihara, 1999; Zhang, Norvilitis and Jin, 2001; Ozkan and Lajunen, 2005; Peng, 2006) with varying findings. As a result many countries have developed their own version of the inventory (Tzuriel, 1984 developed the Israeli BSRI; Antill et. al., 1981 developed the Australian BSRI and Zhang et. al., 2001 developed the Chinese BSRI). However, culturally specific measures were not deemed possible due to the studies sampling methodology and time constraints.

Maybe it is no coincidence that women working in the USA had significantly more occupational self-efficacy, intrinsic motivation and a higher masculine gender role identity than women in the UK. Perhaps it is due to the stronger masculine gender role identity, that the USA women had more intrinsic motivation and higher self-efficacy and vice versa. Long (1989) looked at gender role identity, coping strategies, self-efficacy and stress for women in male-dominated and female-dominated occupations. Long found that women with high masculinity had significantly lower levels of anxiety and strain, higher self-efficacy and coping than low masculinity women. Additionally, low feminine women in non-traditional occupations had higher self-efficacy and greater coping than women with low feminine in traditional

occupations. Long suggests that women with high masculine gender role orientation experience less strain and cope more effectively in masculine occupations. This could suggest women with high masculinity are attracted to this and perhaps other male dominated industries as they know they can cope. In addition, Long found that masculinity and self-efficacy were positively correlated and interrelated. However, not all the women in the current study were in non-traditional occupations, since 23% worked in non-developmental roles and 6% worked in academia. The majority however worked in a developmental and therefore non-traditional work role and male dominated work environment. As Long (1989) found, this thesis also found significant correlations between self-efficacy or in this case domain specific; occupational self-efficacy and masculine gender role identity. Supporting Long's findings that women in non-traditional occupations have higher masculine gender role identity and self-efficacy. Correlations in the thesis were also found between masculine gender role identity and intrinsic motivation and between occupational self-efficacy and intrinsic motivation, suggesting a possible link between the three psychological constructs, expanding on Long's findings. This could imply that women within the games industry are highly intrinsically motivated, which could be perhaps due to them being highly self-efficacious and masculine.

Chapter 5: Conclusion and recommendations

This chapter will start with a discussion of the possible implications of the research for the games industry, before moving on to look at some of the studies limitations, then considering recommendations for possible future research directions and ending with a conclusion.

5.1 Implications for the games industry

Participants tended to be young, single or living with a partner, childless and the majority played computer games in their leisure time. These demographics may indicate that the industry attracts and/or retains a certain type of woman; a woman whose lifestyle and passion for games suits the needs of the industry. If we take into

account the self-to-prototype matching theory, where professional choice is related to the type of person people think is typical for working in that profession (Hannover and Kessels, 2004). Then the industry may benefit from increasing its appeal to a wider demographic of female game workers. For instance, although the majority played games in their leisure time it was apparent that women do not need to play games in order for them to have a viable career within the industry. The industry could encourage non gamers to work in the industry. Women tended to enter the industry from other occupations; one viable route for future generations of women to get into the industry is through an academic one (Fullerton et. al., 2008). In a study of new media workers, Gill (2002) found that many workers in the industry get into new media through more artistic courses rather than computer science. This according to the WWW-ICT (2004) report is also happening throughout ICT occupations due to an increase in more artistically oriented ICT professions. The industry could highlight the routes into the industry and the different skills required. In general, participants had a negative view of the career progression of women and recognised that barriers exist. Despite feeling they themselves are progressing within the industry, a third had not been promoted in the last five years. All of which could be possible explanations why women do not want to enter or remain in the industry and which the industry may consider addressing.

There are a number of practical methods the industry could employ to attract and retain more women and a more diverse workforce. For example, over half of the participants in the study were in a senior grade. The industry would therefore benefit from not only more women in senior roles, but also through making these senior women more visible. This visibility may help in the eradication of the industry's image as 'for boys only' and possibly attract more women. It may also be beneficial for the industry to have a transparent promotion structure. This would enable employees (current and potential) to know what is needed in order to progress. More transparency within the industry could also help eliminate any discriminatory practises which may be overtly or covertly in play within organisations, such as discrimination in pay.

One of the major barriers that this, and previous research into male dominated occupations has found is that of long hours. A long hour's culture appears to exist in

the games industry with over three quarters of women reporting a long hour's culture in their organisation. However, despite this long hour's culture only a third stated they were unhappy with their current work life balance. Although this appears contradictory, it may perhaps indicate how deeply ingrained long hours are within the industry; where long hours are not viewed as effecting work life balance. Or, perhaps employees adapt their work life needs to better fit work demands. The findings may also highlight the needs of the industries demographic. For example, the majority of participants did not have children and therefore the long hour's culture, one could presume, does not interfere with family life, or at least not to the extent it would do for women with children and/or other care responsibilities. The majority of participants worked full time, which is perhaps again a result of the majority also not having children, therefore reducing the need for part-time or flexible working. However, flexible working practices would not only improve the image of the industry as a 'family friendly' working environment, but could also assist in retaining more women, especially women with or considering having children. If more women with families are visible in the industry this in turn, sends out positive messages that the industry is not just for 'boys' and that women, particularly those with families, can have a viable career within the industry. Reasons given for intending to leave the industry tended to suggest women are dissatisfied with their organisations and working environment. This finding also supports the studies finding that women were slightly less satisfied with their organisations than their actual jobs. As the women in the industry age the industry may see more families in it and the industry may need to adapt in order to retain these women. As previous research suggests, changing workplace structures, as well as improving childcare provisions would enable both genders to have active careers (Askari et. al., 2010). The industry may also benefit from highlighting to potential female employees the availability and accessibility of flexible working and family friendly work practises. This might also change the image of the industry. If policies are lacking then the industry would possibly benefit from looking at policies and best practice of other industries with more ingrained policies in place, such as the NHS.

Only 28% of participants had worked in the industry for more than eight years, which could be an indication that the industry has a problem retaining women and suffers from a 'leaky pipeline'. However, an age factor should also not be ruled out.

Negative findings from the study, such as the long hour's culture and the negative attitude towards women's career barriers have previously been discussed. However a number of positive issues were found which may ultimately benefit the industry. For example, the study revealed that women who currently work in the industry are:

- highly motivated both extrinsically (externally) and intrinsically (internally),
- highly satisfied with both their job and organisation (although to a lesser extent with their organisation),
- highly congruent with their job and organisation (again to a lesser extent with their organisation),
- have high self esteem at work and high occupational self-efficacy
- and the majority intended to remain in the industry in five years time

Through emphasising these positive aspects, the games industry could enhance its image as a potential career for women. According to self-to-profession matching theory, people compare what they are good at, what they want from a job and what activities they like, with their (in)correct expectations of a particular profession (Rommes et. al., 2007). Eccles (1994) suggests that inaccurate and insufficient information about professions is the main reason why young women do not consider or rule out occupations that might fit their self schema. The industry may therefore benefit from highlighting the various roles and skills required in the industry; as well as the various backgrounds, both educational and occupational that women come into the industry from. Over three quarters of the women in the study had previously worked outside of the games industry; the most popular industry participants came from was film and TV, followed by IT and then retail. This information may aide the industry in its future recruitment drives, initiatives and policy implementation. It appears that the games industry has many of the same barriers found for women in the wider ICT industry (i.e. a long hour's culture and a lack of women with families). Such barriers imply the new industry of computer games is not, in many ways, so different from the wider, more established sector of which it is part; ICT/SET. This would therefore suggest that a new industry, only really established after equal opportunities legislation was implemented, suffers many of the same barriers and limitations to women as older, established male dominated employment sectors. Women in the games industry have similar demographics to those found in the wider ICT sector; for example, young, single and childless. However, in contrast to

research findings of women in the ICT and SET sectors this thesis found a large percentage of women in the games industry worked in senior grades. Haines (2004) also found high numbers of women in senior roles in her study sample of women in the games industry. This thesis also found similar to findings from the ICT and SET sector, in that women in the games industry have low gender identity and work long hours. What this thesis found in particular that was different to the ICT sector was that women in games have an androgynous gender role identity rather than a masculine one as previously proposed for women in ICT (Wajcman, 2007). These findings suggest that despite the many similarities, the games industry is unique within the sector.

According to Kanter (1977) increasing the numbers of women in an environment will result in a more welcoming working environment. Reviewing women's identity threat in male domains, Hirshfield (2010) concluded that more women in a given environment may not necessarily change the dynamics of a male environment and women may become concentrated and isolated into female dominated areas and subfields. This thesis tends to support Hirshfield's, rather than Kanter's viewpoint. The games industry wants to attract more women to its workforce in the hope of gaining a more diverse audience. However, if future generations of women enter the industry, the industry still may have a gender divide in terms of the roles women occupy. Women may not necessarily be in positions where they can influence what games are made, how and for whom. Therefore, a very important and significant finding from the thesis is that gendered occupational segregation is an important consideration in male dominated industries and spaces.

5.2 Study limitations

Although this study provides important new information about women employed in the computer games industry, it is not without limitations. Although relatively large for a difficult-to-obtain sample, the extent to which women who opted to participate in the study may differ from those who opted not to participate. Thus, the degree to which these results generalise to other women employed in the industry warrants replication in future research. For example, although the sample was international

84% identified themselves as white. Therefore the findings may not be applicable to women in the industry from other ethnic backgrounds.

Another limitation was the online questionnaire only being available in English. Due to the sampling methodology employed and because the questionnaire was available online, women worldwide had the potential to and subsequently did participate in the study. To have the online questionnaire available in a number of different languages would be of real benefit to understanding cultural differences within the games industry of America, Europe and Asia. This is especially pertinent to the games industry due to the cultural differences in games production as highlighted by Johns (2006) between the American, European and Japanese cultures and gamer markets. It may also have been particularly valuable to look at the career influences, attitudes and motivations of women within the games industry in Japan where the game style differs significantly from the USA and European market due to the emphasis on comic book style (i.e. manga). The Japanese games industry has very much an accessible to all outlook with its games and game consoles for example Nintendo Wii and DS. It would have been interesting and beneficial to explore differences in the working environment of Japan, America and Europe. This would highlight how cultural differences may impact on findings. This difference in game style and the isolation of the Japanese industry in contrast to the interconnectedness of the American and European producers may have a significant impact on its employers.

Research in this area would also benefit from the inclusion of the Japanese game industries workforce since Hofstede (2001) reported Japan as having the highest MAS (masculinity) of all the countries in his study. This may therefore, have a significant impact on women's employment in terms of career barriers and drivers, promotion, and how they view and are viewed within male dominated work environments such as the games industry. This is especially so since the findings of the BSRI revealed interesting and often surprising results. Identity of women in male dominated industries is important and more understanding of the women who are attracted to it, remain in and the coping strategies (if any) they use, will all aid not just understanding, but may also potentially encourage more women into these domains and ultimately lead to less gendered occupational segregation. Another study limitation with the questionnaire only being available in English, is that it

reduces the number of non-English speaking participants making the study a predominantly a study of women in the 'Western' games industry. The sample was predominantly from the UK and USA, therefore a larger sample from other countries would enable more cross-cultural evaluation. A larger more cross-cultural sample may also have provided a larger ethnic minority sample for analysis.

Other areas of limitation relates to the measures used; particularly in the use of the Bem sex role inventory (BSRI). It has been highlighted that the BSRI had differing findings in terms of the measures reliability and validity cross-culturally (Katsuranda and Sugihara, 1999; Zhang, Norvilitis and Jin, 2001; Ozkan and Lajunen, 2005; Peng, 2006). It may therefore have been beneficial to use country specific BSRI's e.g. Tzuriel (1984) developed an Israeli BSRI; Antill et. al. (1981) developed an Australian BSRI and Zhang et. al. (2001) developed a Chinese BSRI. However, the majority of the women in the study were from the UK and USA and therefore the original version of the BSRI was an appropriate measure for this sample. Factor analysis revealed the BSRI characteristics loaded quite differently for the current sample than it did for Bem's original study; suggesting that what constitutes as masculine and feminine is different today than in the 1970's. A more specific measure of aspirations, such as the Career Aspirations Scale (O'Brien, 1996) may also have been beneficial. However, the Career Aspirations Scale evaluates women's career choice. High percentages (56%) of the women in this thesis were already in a senior role, which may impact on career aspiration. Perhaps gaining some insight into participant specific aspirations and time frames for planned achievement may have strengthened the research. However, despite these limitations, findings from the study have contributed to the literature in terms of advancing the use of SCCT as a framework and exploring job satisfaction, person-environment fit, attitudes towards career barriers, work life balance and the career aspirations for women working in a male dominated industry.

5.3 Future research directions

Research on women in the new industry of computer games is sparse. More understanding of game workers and their working environment will help organisational researchers understand new industries and possibly how organisational

structures are developing. Gaining further knowledge of the career structures within computer games organisations may potentially enable organisational researchers to see if there are transparent progression policies in place and if career development is equal to all. Due to the paucity of research looking at women in the games industry, there are a number of future research directions that can be considered. For instance, investigating why women have left the industry would lead to more insight into retention issues and may possibly help the wider ICT and SET sector understand the 'leaky pipeline' which is reported to exist. Additionally, although the study used established instruments with psychometric supports when possible, several measures (work life balance, attitudes towards women's career barriers and career progression) were developed for the study and have not been evaluated. Although it is proposed that these measures have promise, future research is needed to further evaluate the psychometric properties of these scales.

The findings suggest there are a number of possible areas which warrant further attention. In order to make this section easier for the reader, it is split into themes. The section will discuss potential future research directions with regards to; the theoretical framework, issues of attraction, identity and retention, and demographics and segregation.

5.3.1 Future research and the theoretical framework

There are a number of specific areas for future research with regards to the model of career influences and the theoretical framework. In particular, the model needs to be cross validated and a replication of the study is needed in order to strengthen, not just the model but also the usage and applicability of a SCCT framework for similar future research. This could be done through applying the model to women in the wider ICT industry or other industries both male and female dominated in order to see if the same career factors influence the aspirational attitudes of women in different work domains. When considering the different roles within the industry (developmental and non-developmental) it would seem that role within the industry is particularly important to how the model fits the data. One consideration is the low numbers of women in the non-developmental sample which may have impacted the model suitability. A larger sample of women working in non-developmental roles

within the industry may affect the models fit for the data set. Research in this area would also be strengthened from a sample of women from a different and perhaps more diverse demographic. For instance, the model may differ on a sample of women with different demographics; such as women with children. It would also be useful to see if the career influences model is applicable to men in the games industry and across the ICT sector. There are a number of ways for SCCT to go in the future. Expanding the model and the applicability of a SCCT framework could be further achieved through adapting the current model to include different psychological measures such as coping self-efficacy and personality. It has been suggested by Lent et. al. (2000) that if an individual believes they are capable of coping effectively with a particular circumstance or environmental condition, then the circumstance or condition would no longer be considered a barrier. Furthermore, Lent et. al. (2000) suggest that individuals with strong coping efficacy may be more likely to persist in their goal attainment than individuals who believe they are less efficacious in dealing with obstacles or accessing resources in helping them to cope. This would be of particular benefit in light of the current findings; especially since it may have been the efficiency of the women that perhaps enabled them to overcome any career barriers perceived. Therefore, looking at how people cope may benefit and further expand the career influences model.

The thesis utilised a SCCT framework to look at the career aspirations of women in a male dominated industry. SCCT has been shown as a useful framework for modelling and looking at career aspirations and understanding women's career progression. Future research may want to utilise SCCT in the area of career progression and I think adopting longitudinal research methods would really strengthen SCCT's applicability in the area of women's career progression and validate causal effects. One possible way forward would be to develop a model over two or more time stages in a career. The research area would also be strengthened by the use of longitudinal methods to provide useful information on the career progression of women within the games industry. Longitudinal research would add to the area since it has been recognised that there is a lack of research: '*examining the longitudinal relations among the variables in SCCT's models*' (Lent et. al., 2010, p392). Research might also highlight the strategies women adopt in order to adapt or fit into male dominated work environments. According to Brown and Lent (1996) people even with high self-

efficacy might avoid a career if they perceive considerable barriers to attaining it. Perhaps the women in the current study did not perceive any barriers before entering the career but do so now they are in it. Research in the area may also benefit from an understanding of how the women became self-efficient. For instance, according to SCCT career choice is influenced by the beliefs the individual develops through four major sources; personal performance accomplishments, vicarious learning, social persuasion and physiological states and reactions. Future research may want to gain a better understanding of how these four sources are developed and maintained in male dominated work environments for women.

5.3.2 Issues of attraction, identity and retention

Other areas for future consideration centre on attraction, identity and retention. For instance, understanding why some women choose to work in male dominated occupations would be valuable. Future research may consider investigating why some women are attracted to the games industry and why some women are not. This thesis has found that women in the industry are highly motivated by both internal and external rewards. These findings pose some interesting questions, For example, is it these motivations alone that attract people to the industry? What other issues come into play? With regards to attraction, a number of questions can be raised. For instance, does the industry attract a certain type of woman or do women have to adapt to its masculine culture? This is especially pertinent in terms of their gender identity which has been highlighted as an issue and an interesting area of research in this thesis. Equalitarian gender beliefs have been previously correlated with higher self-efficacy and self esteem (Athrens and O'Brien, 1996). Gaining an understanding of the gender role attitudes of the women in the industry would be an interesting area for future research and add to the findings from the thesis.

Differences in gender role identity also raised some interesting questions. For example, where participants attracted to the industry because of their androgynous gender role identity? Did the USA participants become more masculine through working in a male dominated environment? And if so, why did women in the UK have less masculine gender role identity than women in the USA? Does this difference occur in other industries? Research by Smith, Noll and Becker-Bryant

(1999) found both men and women reported more masculinity when imagining themselves in a work compared to a social context. Perhaps highlighting that the workplace is still considered a male domain. Expanding on this, maybe women in games perceive themselves more masculine because they are in a masculine industry. It would be interesting to see if any difference in the gender role identity of participant's occurred had they considered themselves in other situations not just work, such as the home. This may have thrown some light onto whether the industry attracts women with a more masculine or androgynous identity or if it is a strategy used to cope with the working environment. Research may want to investigate if there are differences between the more established and the newer game making countries in terms of the working environment. In terms of retention the most prominent question for further research would be to take a closer look at the effect crunch time has on both women and men in the industry. How crunch time (and long hours) can be minimised may also aide the industries recruitment and retention initiatives. Qualitative follow up investigating the women who planned to leave the industry and why would also facilitate the industries recruitment and retention strategies.

5.3.3 Demographics and segregation

Segregation within the industry and the demographics of the industry both give rise to interesting questions and potential areas of future investigation. For instance, how will this 'young' industry age? Will the industries demographics change in terms of age, children and care responsibilities? If more women within the industry have children, how will attitudes towards such things as relocation and work life balance change? Of particular interest is if women in the industry are not having children due to their careers, or are they postponing child bearing until their careers are established? In regards to flexible working, it would be interesting and extremely useful in terms of policy development and implementation to evaluate women who do work flexibly and the impact this is having on, or they feel it is having on their careers. With regards to grade, will more women in senior roles have an impact on reducing the image of the industry as a male domain? Will more women in senior roles have an impact on environmental changes within the industry, such as those relating to work life balance issues and flexible working practices? How will the

industry change with the inevitable increase of Generation Yers entering into it? Also worth considering in future research is if women feel any career barriers can be overcome or not. Did the women expect any barriers before they entered the industry? To what extent would they expect similar barriers in other industries? What strategies do women with families use to cope with crunch time? It would also have been interesting to know what game genres the women in the study worked on and if they are attracted to, or remain in a certain organisation due to the games they make and if the game genres they make has any significance to their attitudes, aspirations or motivations in their job and organisation. It may also have been valuable to have taken into account the size of organisation the women worked in as this may have some significance in the way women feel about their working environment and their minority status. There is not just a paucity of research with regards to women working in the games industry. The industry itself has only recently started to receive academic attention. Research investigating working in new media found men and women had different experiences (Gill, 2002). Gill's research included men and women from the games industry but a closer look at how the sexes experience the industry specifically, would be of real advantage to research in this area.

5.4 Conclusion

Men dominate the games industry both as developers and gamers. This thesis intended to gain a deeper understanding of the attitudes, motivations and aspirations of women who have broken into this male domain. Gaining an understanding of women in the industry may be beneficial in attracting other women to the industry and also highlight the industry as a potential career for future generations of women. Encouraging more women into male dominated occupations is one strategy for minimising gendered occupational segregation and the many inequalities that come with it.

In line with the theoretical expectations, the results of this thesis suggest that a combination of external and internal factors can be used in models of career factors which influence women's career aspirations. Future research should continue to refine these relationships to further enhance our understanding of the effects of career factors on women's aspirations in male dominated occupations. The thesis developed

a model of career influences from a sample of women in the male dominated games industry. The variables included in the model show how a SCCT framework can be used to look at women's career influences to aspirations. The thesis has also shown how SCCT can be used to look at the careers of women already on a career path; highlighting and expanding the usage of SCCT in career development and career progression research. The results advance knowledge regarding the explanatory power of SCCT (Lent et. al., 1994) in describing career influences of women working in a male domain. The thesis also found a number of interesting findings to add to the paucity of research on women working in this new industry. Since women are underrepresented in a number of industries, investigating their career aspirations and their career development seems critically important.

Due to the lack of research into the area of game workers much more research is needed in all aspects of the industry, its organisational structures, working environment and its employees. One of the main findings of the model is the importance of person-environment fit for both satisfaction and aspirations. More research into the area will enable the games industry to develop its working environment and highlight the industry as a potential career to a more diverse workforce. This thesis has shown that female game professionals are a heterogeneous group from a variety of backgrounds, in a broad range of positions and occupying all levels within the industry. This heterogeneity means female game professionals need for support will vary according to, but not limited to, factors such as age, ethnicity, career stage, domestic responsibilities and the role they occupy within the industry.

Several empirical studies have shown that the marginalisation of women from the technological community can have a profound influence on design, technical content and the use of artefacts (Lie, 2003; Lerman et. al., 2003). Gender relations have been found to be embedded in the design, meaning and use of ICTs (Wajcman, 2007). Women may have played a part in the history of the development and use of technology (Plant, 1998), but they are not yet fully integrated into its design (Wajcman, 2007). Drawing more women into the design of ICT is not only an equal opportunities issue, but is also crucially about how the world we live in is designed and for whom. The games industry is part of the wider ICT and SET sectors and has been viewed as a forerunner in the development of technology (Flanagan, 2003).

There is enormous variability in gendering by place, nationality, ethnicity, sexuality and generation and thus, women's experience of ICT's will be diverse. This thesis has highlighted some of the diversity between a sample of women in the games industry. Heeter et. al. (2009) used the word 'alien' to refer to the manner in which women are considered in the culture of producing and playing games. The industry has also been criticised for ignoring the needs of minority players such as women (Fron et. al., 2007). Female game developers could alter the image of the industry and perhaps help accommodate the needs of minority players.

The games industry not only needs to improve its appeal to a more diverse workforce due to a recent skills shortage; it also wants to improve its appeal to a more diverse workforce. The aim of a more diverse workforce within the industry has the potential of making games with more appeal to wider and more diverse audiences. Men and women have been found to have different play styles and attracting more female developers may enable more female gamers and vice versa. As according to Fullerton: '*one of the effects of getting women into game design is that they are going to add play patterns*' (Fullerton, 2009)⁴³. Due to this 'want' of attracting a wider audience through a more diverse workforce, the games industry is placed in a unique position. Perhaps this unique position will lead this industry to pave the way forward in enhancing its appeal for women and other underrepresented groups for other male dominated industries.

Research shows women are active gamers, especially with more casual than hard core games. Braithwaite (2010) views the social networksite Facebook as a catalyst in which women are increasingly becoming more hard core gamers.⁴⁴ The current study has highlighted a number of areas where the games industry could significantly improve its appeal as a viable career to women. The image of the games industry, like the wider ICT and SET industries, is still very much 'boys work'. However, this image could change with a more diverse workforce and with an increasing number of female gamers world-wide, the industry may then begin to lose its 'for boys only',

⁴³ <http://www.edge-online.com/features/gdc-we-need-more-women-games> Posted 27th March, 2009; accessed 21st May 2010.

⁴⁴ http://www.huffingtonpost.com/brenda-brathwaite/women-in-games-from-famin_b_510928.html Posted 24th March, 2010 accessed 21st May 2010.

masculine image. The industry could widen its appeal through an increased awareness of the variety of roles and skills within the industry and through highlighting the benefits and rewards of working in such a creative, competitive and growing industry. The findings from this thesis will hopefully enable the games industry to review its policies and working practices in order to facilitate women and other minority groups within the working environment. So, instead of women 'just fitting in' more can be done to eradicate career barriers and discriminatory work practices to make women feel more comfortable working in the industry. As the career influences model highlights the importance of fitting in for women's career aspirations.

Women should be involved in all aspects of the industry, especially games development, due to the numerous benefits that the industry can offer, such as the external and internal motivations evident in the current study. Importantly, the computer games industry has a massive impact on culture, technology and the media landscape today. To illustrate the magnitude of the industry, in 2009, games were one of the biggest forms of entertainment in Britain, outselling films (including going to the cinema and DVD sales, Wallop, 2009). Highlighting the significance of the games industry to today's culture, Gillespie (2000) notes that: *'this \$9 billion market is art and is significant in today's culture in the same way that books, film, radio, television, and rock-and-roll were the significant media of the past (in Flanagan, 2003, p 361).*

Further research into the experiences of women working in the games industry and other male dominated sectors will enable those industries to alter working practices in ways which may not only attract but also retain a more diverse workforce. This thesis highlights how highly motivated women in the industry are. As well as demonstrating how satisfied, confident and congruent they are with their jobs and organisations. More research investigating women's and men's experience of working in the male dominated, creative games industry will help gain further knowledge into new industries and new media, as well as help gain a further understanding of the wider ICT and SET industries for both male and female employees.

References

- Abdelal, R., Herrera, Y.M., Johnston, A.I., and McDermott, R. (2005). Identity as a variable. Identity as a variable conference. Harvard University, Harvard University: 1-35.
- Acker, J. (1990). "Hierarchies, jobs, bodies: a theory of gendered organizations." Gender & Society 4(2): 139-58.
- Adam, A., Richardson, H., Griffiths, M., Keogh, C., Moore, K., and Tattersall, A., (2006). "Being an 'it' in IT: gendered identities in the IT workplace." European Journal of Information Systems 15(4): 368-378.
- Adams, C. H., and Sherer, M. (1985). "Sex-role orientation and psychological adjustment: implications for the masculinity model." Sex Roles 12(11/12): 1211-1218.
- Adkins, L. (2002). Revisions: gender and sexuality in late modernity. Buckingham, Open University Press.
- Adler, S., Laney, J., and Packer, M. (1993). Managing women: feminism and power in educational management. Buckingham, Open University Press.
- Adya, M., and Kaiser, K.M. (2005). "Early determinants of women in the IT workforce: a model of girls' career choices." Information Technology and People 18(3): 230-259.
- Ahrens, J. A., and O'Brien, K.M. (1996). "Predicting gender-role attitudes in adolescent females." Psychology of Women Quarterly 20: 409-417.
- Ahuja, M. K. (2002). "Women in the information technology profession: A literature review, synthesis and research agenda." European Journal of Information Systems 11: 20-34.

Albion, M. J. and G. J. Fogarty (2002). "Factors influencing career decision making in adolescents and adults." Journal of Career Assessment 10(1): 91-126.

Alksnis, C., Desmarais, S., and Curtis, J. (2008). "Workforce segregation and the gender wage gap: is "women's" work valued as highly as "men's"?" Journal of Applied Social Psychology 38: 1416-1441.

Allen, I. (2005). "Women doctors and their careers: What now?" British Medical Journal 331(September): 569-572.

Allen, T. D., Eby, L.T., Poteet, M.L., Lentz, E. and Lima, L. (2004). "Career benefits associated with mentoring for protégé's: a meta-analysis." Journal of Applied Psychology 89(1): 127-36.

Alvesson, M., and Due Billing, Y. (2009). Understanding gender and organizations. London, Sage.

Amabile, T. M., Hill, K.G., Hennessey, B.A. and Tighe, E.M. (1994). "The work preference inventory: assessing intrinsic and extrinsic motivational orientations." Journal of Personality and Social Psychology 66(5): 950-967.

Angelo, J. (2004). New study reveals that women over 40 who play online games spend more time playing than male or teenage gamers. Business Wire. New York, America Online Inc.

Antill, J. K., Cunningham, J.D., Russell, G., and Thompson, N.L. (1981). "An Australian sex role scale " Australian Journal of Psychology 33(169-183).

Arfken, D. E., Bellar, S.L. & Helms, M.H. (2004). "The ultimate glass ceiling revisited: The presence of women on corporate boards." Journal of Business Ethics 50: 177-186.

Argyris, C. (1985). Strategy, change and defensive routines. Boston, Pitman.

Arnold, J., Robertson, I.T. and Cooper, C.L. (1991). Work Psychology: Understanding human behaviour in the workplace. London, Pitman.

Aronson, K. A., Laurenceau, J. P., Sievcking, N., and Bellet, W. (2005). "Job satisfaction as a function of job level." Administration and Policy in Mental Health 32(3): 285-291.

Arthur, J. B., and Airman-Smith, L. (2001). "Gain sharing and Organizational Learning: An Analysis of Employee Suggestions Over Time." Academy of Management Journal 44(4): 737-754.

Ashforth, B. E., and Mael, F.A (1989). "Social Identity theory and the organisation." Academy of Management Review 14(1): 20-39.

Ashforth, B. E., and Mael, F. (2001). Role transitions in organizational life: an identity-based perspective. London, Lawrence Erlbaum Associates.

Askari, S. F., Liss, M., Erchull, M.J., Staebell, S.E., and Axelson, S.J. (2010). "Men want equality, but women don't expect it: young adults' expectations for participation in household and child care chores." Psychology of Women Quarterly 34: 243-252.

Astin, H. S. (1984). "The meaning of work in women's lives: a socio-psychological model of career choices and work behavior." The Counselling Psychologist 12: 117-126.

Atkinson, C., and Hall, L. (2009). "The role of gender in varying forms of flexible working." Gender, Work and Organisation 16(6): 650-666.

Azar, I. A. S., and Vasudeva, P. (2006). "Self-efficacy and self-esteem: A comparative study of employed and unemployed married women in Iran." German Journal of Psychiatry 9(3): 111-117.

Badgett, M. V., and Folbre, N. (2003). "Job gendering: occupational choice and the marriage market." Industrial Relations 42(2): 270-298.

Bagihole, B., Powell, A., Barnard, S. and Dainty, A. (2008). Researching cultures in science, engineering and technology: an analysis of current and past literature. UK resource centre for women in science, engineering and technology, UKRC Research Report Series.

Bain, O., and Cummings, W. (2000). "Academe's glass ceiling: societal, professional-organizational, and institutional barriers to the career advancement of academic Women " Comparative Education Review 44(4): 493-514.

Bajo, L. M., and Dickson, M.W. (2002). "Perceptions of organisational culture and women's advancement in organisations: A cross-cultural examination." Sex Roles 45: 399-414.

Bakken, L. I., Bryars-Winston, A., and Wang, M-F. (2006). "Viewing clinical research career development through the lens of social cognitive career theory." Advances in Health Sciences Education 11: 91-110.

Bandura, A. (1986). Social foundations of thought and action: a social cognitive theory. Englewood Cliffs, NJ, Prentice Hall.

Bandura, A., and Locke, E.A. (2003). "Negative Self-Efficacy and Goal Effects Revisited." Journal of Applied Psychology 88(1): 87-99.

Barry, A. M., and Cook, L. (2002). "Managing health boards: the difference women could make." Public Money and Management Journal 22: 31-34.

Bartol, K. M., and Aspray, W. (2006). The transition of women from the academic world to the IT workplace: A review of the relevant research. Women and information technology: Research on underrepresentation. J. M. Cohoon, & Aspray, W. Cambridge, MIT Press: 377-419.

Baumeister, R. F., Smart, L. and Boden, J. (1996). "Relation of threatened egotism to violence and aggression: The dark side of high self-esteem." Psychological Review 103: 5-33.

Baumeister, R. F., Campbell, J.D., Krueger, J.I., and Vohs, K.D. (2003). "Does high self esteem cause better performance, interpersonal success, happiness or healthier lifestyles." Psychological Science in the Public Interest 4(1): 1-44.

Bawden, A. (2007). Missing male. The Guardian newspaper. Published 31st July, 2007.

Beasley, B., and Standley, T.C. (2002). "Shirts vs. skins: clothing as an indicator of gender role stereotyping in video games." Mass Communication and Society 5(3): 279-293.

Beck, U. (2000). The brave new world of work. Cambridge, Polity.

Bednar, R. L., Wells, M.G., and Peterson, S.R. (1989). Self-esteem: paradoxes and innovations in clinical theory and practice. Washington, D.C, American Psychological Association.

Bem, S. L. (1974). "The measurement of psychological androgyny." Journal of Consulting and Clinical Psychology 42(2): 155-162.

Bem, S. L. (1975). "Sex role adaptability: one consequence of psychological androgyny." Journal of Personality and Social Psychology 31: 634-643.

Bem, S. L. (1981a). "Gender schema theory: a cognitive account of sex typing." Psychological Review 88(4): 354-364.

Bem, S. L. (1981b). "The BSRI and gender schema theory: a reply to Spence and Helmreich." Psychological Review 88(4): 369-371.

Bennetts, L. (2007). The feminine mistake: are we giving up too much? New York, Voice/Hyperion.

Berg, A. J., and Lie, M. (1994). Technological flexibility: bringing gender into technology (or was it the other way round)? Bringing technology home - gender and technology in a changing Europe. Buckingham, OUP.

Berg, A. J., and Lie, M. (1995). "Feminism and constructivism: do artefacts have gender?" Science, Technology and Human Values 20(3): 332-351.

Berrington, A., Yongjian, H., Smith, P. W. F., and Sturgis, P. (2008). "A graphical chain model for reciprocal relationships between women's gender role attitudes and labour force participation." Journal of the Royal Statistical Society: Series A (Statistics in Society) 171(1): 89-108.

Betz, N., and Fitzgerald, L. F. (1987). The Career Psychology of Women. New York, Academic Press.

Betz, N. E., and Hackett, G. (1997). "Applications of self-efficacy theory to the career assessment of women" Journal of Career Assessment 5(4): 383-402.

Betz, N. E., Borgen, F.H., and Harmon, L.W. (2006). "Vocational confidence and personality in the prediction of occupational group membership." Journal of Career Assessment 14(1): 36-55.

Betz, N. E. (2007). "Career self-efficacy recent research and emerging directions." Journal of Career Assessment 15(4): 403-422.

Betz, N. E. and R. S. Schifano (2000). "Evaluation of an intervention to increase realistic self-efficacy and interests in college women." Journal of Vocational Behavior 56(1): 35-52.

Bird, G. W., and Schnurman-Crook, A. (2005). "Professional identity and coping behaviors in dual-career couples." Family Relations 54(1): 145-160.

Blair-Loy, M., and Wharton, A.S. (2002). "Employee' use of work-family policies and the workplace social context." Social Forces 80: 813-845.

Blanchard-Fields, F., Suhrer-Roussel, L., and Hertzog, C. (1994). "A confirmatory factor analysis of the Bem sex role inventory: old questions, new answers." Sex Roles 30(5/6): 423-457.

Bleeker, M. M., and Jacobs, J.E. (2004). "Achievement in math and science: do mothers' beliefs matter 12 years later?" Journal of Educational Psychology 96(1): 97-109.

Blossfeld, H.-P., and Drobnic, S. (2001). Careers of couples in contemporary societies. Oxford, Oxford University Press.

Blumer, H. (1969). Symbolic Interactionism: perspectives and method. Upper Saddle River, NJ, Prentice-Hall, Inc.

Blyton, P., and Jenkins, J (2007). Key concepts in work. London, Sage.

Bolzendahl, C. I., and Myers, D.J. (2004). "Feminist attitudes and support for gender equality: opinion change in women and men, 1974-1998." Social Forces 83: 759-790.

Bonanno, P., and Kommers, P.A.M. (2008). "Exploring the influence of gender and gaming competence on attitudes towards using instructional games." British Journal of Educational Technology 39(1): 97-109.

Boomsma, A. (1982). The robustness of LISREL against small sample sizes in factor analysis models. Systems under indirect observation. H. Wold, and Joreskog, K. New York, Elsevier-North-Holland: 149-173.

Boomsma, A., and Hoogland, J.J. (2001). The Robustness of LISREL Modelling Revisited. Structural equation modeling: Present and future: A Festschrift in honor of Karl Jöreskog (pp. 139–168). A. Boomsma, and Hoogland, J.J. Chicago, Scientific Software International 139-168.

Bradley, H. (1993). Across the great divide. Doing women's work: men in non-traditional occupations. C. Williams. London, Sage: 10-28.

Bram, S. (1984). "Voluntarily childless women: Traditional or non-traditional?" Sex Roles 10(3/4): 195-206.

Brand, J. E. (2007). *Interactive Australia 2007: facts about the Australian computer and video game industry*, Bond University.

Braun, V., and Clarke, V/ (2006). "Using thematic analysis in psychology." Qualitative Research in Psychology 3(2): 77-101.

Brief, A. P., and Weiss, H.M. (2002). "Organizational behavior: affect in the workplace." Annual Review of Psychology 53: 279-307.

Britton, D. M. (2000). "The epistemology of the gendered organization." Gender and Society 14(3): 418-434.

Britton, D. M., and Logan, L. (2008). "Gendered organizations: progress and prospects." Sociology Compass 2(1): 107-121.

Brown, J. A., Woodward, C. A., Shannon, H. S., Cunningham, C. E., Lendrum, B., McIntosh, J., and D. and Rosenbloom (1999). "Determinants of job stress and job satisfaction among supervisory and non-supervisory employees in a large Canadian teaching hospital." Healthcare Management Forum 12: 27-33.

Brown, J. D., and Dutton, K.A. (1995). "Truth and consequences: the costs and benefits of accurate self-knowledge." Personality & Social Psychology Bulletin 21: 1288-1296.

Brown, S. D., and Lent, R.W. (1996). "A social cognitive framework for career choice counselling." Career Development Quarterly 44: 354-366.

Brown, S. G., and Barbosa, G. (2001). "Nothing is going to stop me now: obstacles perceived by low-income women as they become self-sufficient." Public Health Nursing 18: 364-372.

Bryce, J., and Rutter, J. (2003). The gendering of computer gaming: experience and space. Leisure cultures: investigations in sport, media and technology. S. Fleming, and Jones, I., Leisure Studies Association: 3-22.

Buchanan, T., and Smith, J. (1999). "Using the internet for psychological research: Personality testing on the world wide web." British Journal of Psychology 90: 125-144.

Burke, R. J., and McKeen, C.A. (1994). Carer development among managerial and professional women. Women in management : current research issues. M. Davidson, and Burke, R. London, Paul Chapman Publishing.

Burkett, E. (2000). The Baby Boon: How Family Friendly America Cheats the Childless. New York, The Free Press.

Burns, B., Griffiths, M., Moore, K., and Richardson, H. (2007). Disappearing women: North West ICT final report. Manchester, Salford University.

Butler, D., and Geis, F. L. (1990). "Nonverbal affect responses to male and female leaders: Implications for leadership evaluations." Journal of Personality and Social Psychology 58: 48-59.

Butler, J. (1990). Gender trouble: feminism and the subversion of identity. London, Routledge.

Byrne, B. M. (2001). Structural equation modelling with AMOS: basic concepts, applications and programming. New Jersey, Lawrence Erlbaum Associates.

Cable, D. M., & Judge, T. A. (1996). "Person-organization fit, job choice decisions, and organizational entry." Organizational Behavior and Human Decision Processes 67: 294-311.

Cable, D. M., and DeRue, D. S. (2002). "The convergent and discriminant validity of subjective fit perceptions." Journal of Applied Psychology 87: 1-17.

Cabrera, S. F., Sauer, S.J., and Thomas-Hunt, M.C. (2009). "The evolving manager stereotype: the effects of industry gender typing on performance expectations for leaders and their teams." Psychology of Women Quarterly 33: 419-428.

Camicero, L., Cardoso, E, Dempster, A., Liu, K., Mould, O., Pezzana, S.P., and Roodhouse, S. (2008, unpublished). Game on! A report on the interactive leisure software subsector in London. Creative Industries Observatory, University of the Arts London.

Campbell, S. M., and Collaer, M.L. (2009). "Stereotype threat and gender differences in performance on a novel visuospatial task." Psychology of Women Quarterly 33: 437-444.

Campbell, T., Gillaspay, J.A., and Thompson, B. (1997). "The factor structure of the Bem Sex-Role Inventory (BSRI): confirmatory analysis of long and short forms." Educational and Psychological Measurement 57(1): 118-124.

Camussi, E., and Leccardi, C. (2005). "Stereotypes of working women: the power of expectations." Social Science Information 44(1): 113-140.

Cann, A., and Siegfried, W.D. (1990). "Gender stereotypes and dimensions of effective leader behaviour." Sex Roles 23(7/8): 413-419.

Carli, L. L. (2001). "Gender and social influence." Journal of Social Issues 57: 725-741.

Carmines, E. G., and McIver, P.J. (1981). Analyzing Models with Unobserved Variables: Analysis of Covariance Structures. Social Measurement: Current Issues. George W. Bohrnstedt and Edgar F. Borgatta. Beverly Hills, CA, Sage Publications: 65-115.

Case, S. (2004). "Women in gaming."
<http://www.microsoft.com/windowsxp/games/learnmore/womeningames.mspix>.
Accessed 28th April 2008.

- Cassell, C. (1997). "The business case for equal opportunities: Implications for women in management." Women in Management Review 12(1): 11-16.
- Cassidy, M. L., and Warren, B.O. (1996). "Family employment status and gender role attitudes: A comparison of women and men college graduates." Gender and Society 10(3): 312-329.
- Cejka, M. A., and Eagly, A.H. (1999). "Gender-stereotypic images of occupations correspond to the sex segregation of employment." Personality and Social Psychology Bulletin 25(4): 413-423.
- Chalk, L. M., Meara, N., and Day, J.D. (1994). "Possible selves and occupational choices." Journal of Career Assessment 2(4): 364-383.
- Chan, V., Stafford, K., Klawe, M., and Chen., G. (2000). Gender differences in Vancouver secondary students: Interests related to Information Technology Careers. Women, Work and Computerization: Charting a Course to the Future. E. Balka, and Smith, R. Boston, Kluwer Academic Publishers: 58-69.
- Chang, T. F. H. (2003). "A social psychological model of women's gender-typed occupational mobility." Career Development International 8(1): 27-39.
- Chen, G., Gully, S.M., and Eden, D. (2001). "Validation of a new general self-efficacy scale." Organizational Research Methods 4(1): 62-83.
- Choi, N., and Fugua, D.R. (2003). "The structure of the Bem Sex Role Inventory: a summary report of 23 validation studies." Educational and Psychological Measurement 63(5): 872-887.
- Choi, N., Fuqua, D.R., and Newman, J.L. (2007). "Hierarchical confirmatory factor analysis of the Bem Sex Role Inventory." Educational and Psychological Measurement 67(5): 818-832.

- Christie, A. (2006). "Negotiating the uncomfortable intersections between gender and professional identities in social work." Critical Social Policy 26(2): 390-411.
- Chugh, S., and Sahgal, P. (2007). "Why do few women advance to leadership positions?." Global Business Review 8(2): 351-365.
- Ciabattari, T. (2007). "Single mothers, social capital, and work-family conflict." Journal of Family Issues 28(1): 34-60.
- Cinamon, R. G., Weisel, A., and Tzuk, K. (2007). "Work-family conflict within the family." Journal of Career Development 34(1): 79-100.
- Clark, A. E. (1997). "Job satisfaction and gender: why are women so happy at work? ." Labour Economics 4(4): 341-372.
- Clark, S. C. (2001). "Work cultures and work/family balance." Journal of Vocational Behavior 58: 348-365.
- Clegg, S., and Trayhurn, D. (2000). "Gender and computing: not the same old problem." British Educational Research Journal 26(1): 75-89.
- Coleman, M. (2001). "Achievement against the odds: the female secondary head teachers in England and Wales." School Leadership and Management 21(1): 75-100.
- Collinson, D., and Hearn, J. (1994). "Naming men as men: implications for work, organization and management." Gender, Work and Organization 1(1): 2-20.
- Connell, R. (2000). The men and the boys. Cambridge, Polity Press.
- Consalvo, M. (2008). Crunched by passion: women game developers and workplace challenges. Beyond barbie and mortal kombat: new perspectives on gender and gaming. H. Kafai, Denner and Sun. Massachusetts, London, The MIT Press: 177-192.

Cook, C., Heath, F., and Thompson, R.L. (2000). "A meta-analysis of response rates in Web or internet based surveys." Educational and Psychological Measurement 60(6): 821-836.

Cook, E. P., Heppner, M.J. and O'Brien, K.M. (2002). "Career development of women of color and white women: Assumptions, conceptualization, and interventions from an ecological perspective." The Career Development Quarterly 50(291-305).

Corley, M., and Scheepers, C. (2002). "Syntactic priming in English sentence production: Categorical and latency evidence from an internet based study." Psychonomic Bulletin Review 9(1): 126-131.

Coronel, J. M., Moreno, E., and Carrasco, M.J. (2010). "Work-family conflicts and the organizational work cultures as barriers to women in educational managers." Gender, Work and Organization 17(2): 219-239.

Correll, S. J. (2004). "Constraints into preferences: gender, status and emerging career aspirations." American Sociological Review 69: 93-133.

Correll, S. J., Benard, S., and Paik, I. (2007). Getting a job: is there a motherhood penalty? American Journal of Sociology 112(5): 1297–1338.

Cortis, R., and Cassar, V. (2005). "Perceptions of and about women as managers: investigating job involvement, self-esteem and attitudes." Women in Management Review 20(3): 149-164.

Costa, P. T., and McCrae, R.R. (1992). Revised NEO personality inventory (NEO PI-R) and NEO five-factor inventory (NEO-FFI) professional manual. Odessa FL., Psychological Assessment Resources.

Costa, P. T., Terracciano, A., and McCrae, R.R. (2001). "Gender differences in personality traits across cultures: robust and surprising findings." Journal of Personality and Social Psychology 81(2): 322-331.

Cotter, D. A., Hermsen, J.A., and Vanneman, R. (2003). "The effects of occupational gender segregation across race." The Sociological Quarterly 44(1): 17-36.

Craig, K. M., and Rand, K. A. (1998). "The perceptually "privileged" group member: Consequences of solo status for African Americans and Whites in task groups." Small Group Research 29: 339-358.

Crawford, G., and Gosling, V. (2005). "Toys for boys? women's marginalization and participation as digital gamers." Sociological Research Online 10(1).

Creed, P., Patton, W. and Prideaux, L.A. (2006). "Causal relationship between career indecision and career decision-making self-efficacy." Journal of Career Development 33(1): 47-65.

Crocker, J., and McGraw, K. M. (1984). "What's good for the goose is not good for the gander: Solo status as an obstacle to occupational achievement for males and females." American Behavioural Scientist 27: 357-369.

Crompton, R., and Le Feuvre, N. (2006). "Gender, family and employment in comparative perspective: the realities and representations of equal opportunities in Britain and France." Journal of European Social Policy 10: 334-48.

Crompton, R., and Lyonette, C. (2006). "Some issues in cross-national comparative research methods: A comparison of attitudes to promotion, and women's employment, in Britain and Portugal." Work, Employment and Society 20(2): 403-414.

Cross, S., and Bagilhole, B. (2002). "Girls' jobs for the boys? men, masculinity and non-traditional occupations." Gender, Work and Organization 9(2): 204-226.

Cunningham, G. B., Doherty, A.J. and Gregg, M.J. (2007). "Using social cognitive career theory to understand head coaching intentions among assistant coaches of women's teams." Sex Roles 56: 365-372.

Cunningham, M. (2007). "Influences of women's employment on the gendered division of household labor over the life course: evidence from a 31-year panel study." Journal of Family Issues 28(3): 422-444.

Cunningham, S. (2000). "Re-inventing the introductory computer graphics course: providing tools for a wider audience." Computers & Graphics 24(2): 293-296.

D'Amato, A., and Herzfeldt, R. (2008). "Learning orientation, organizational commitment and talent retention across generations: a study of European managers." Journal of Managerial Psychology 23(8): 929-953.

Danziger, N., and Valency, R. (2006). "Career anchors: distribution and impact on job satisfaction, the Israeli case." Career Development International 11(4): 293-303.

Danziger, N., Rachman-Moore, D., and Valency, R. (2008). "The construct validity of Schein's career anchors orientation inventory." Career Development International 13(1): 7-19.

Davis, S. N. (2007). "Gender ideology construction from adolescence to young adulthood." Social Science Research 36: 1021-1041.

Davidson, M., and Cooper, C.L. (1992). Shattering the glass ceiling: the woman manager. London, Paul Chapman Publishing.

De Ruijter, E., and Van der Lippe, T. (2007). "Effects of job features on domestic outsourcing as a strategy for combining paid and domestic work." Work and Occupations 34(2): 205-230.

Deci, E. L., and Ryan, R. M. (1985). Intrinsic motivation and self determination in human behavior. New York, Plenum.

DeFrank, R. S., and Ivancevich, J. M. (1998). "Stress on the job: An executive update." Academy of Management Executive 12(1): 55-66.

Del Castillo, A. R. (1980). Mexican women in organisation. Mexican women in the United States: Struggles past and present. M. Mora, and Del Castillo, A.R. Los Angeles, Chicago Studies Research Centre Publications: 7-16.

Dellinger, K. (2004). "Masculinities in "Safe" and "Embattled" organizations-accounting for pornographic and feminist magazines." Gender & Society 18: 545-66.

Denner, J., and Campe, S. (2008). What games made by girls can tell us. Beyond barbie and mortal kombat: new perspectives on gender and gaming. Y. B. Kafai, Heeter, C., DennerJ., and Sun, J.Y. Massachusetts, London, The MIT Press: 129-144.

Department of Health (2004). NHS hospital and community health services non-medical staff in England: 1994-2004. Department of Health.

Derks, B., Ellemers, N., van Laar, C., and de Groot, K. (2010). "Do sexist organizational cultures create the queen bee?" British Journal of Social Psychology
Available through: British Psychological Society
<http://bpsoc.publisher.ingentaconnect.com/content/bpsoc/bjisp/pre-prints/bjisp1181>
[accessed November 3rd 2010]. DOI: 10.1348/014466610X525280.

Deuze, M., Martin, C.B., and Alen, C. (2007). "The professional identity of gameworkers." Convergence: The international journal of research into new media technologies 13(4): 335-353.

DfEE (1999). Written evidence from the Department of Education and Employment to the school teachers review body. London, Government Statistical Service.

Diamond, C., and Whitehouse, G. (2007). "Gender, computing and the organization of working time: public/private comparisons in the Australian context." Information, Communication and Society 10(3): 320-337.

Dickerson, A., and Taylor, M.A. (2000). "Self-limiting behaviour in women: self-esteem and self-efficacy as predictors." Group and Organisation Management 25(2): 191-210.

Diekmann, A. B., and Eagly, A.H. (2000). "Stereotypes as dynamic constructs: women and men of the past, present and future." Personality & Social Psychology Bulletin 26(10): 1171-1188.

Dietz, T. L. (1998). "An examination of violence and gender role portrayals in video games: implications for gender socialization and aggressive behaviour." Sex Roles 38: 425-442.

Divinich, J. (2008). "The divinich tapes: females representation in games across genres, consoles."

Doherty, L., and Manfredi, S. (2006). "Action research to develop work-life balance in a UK University." Women in Management Review 21(3): 241-259.

Domenico, D. M., and Jones, K.H. (2006). "Career aspirations of women in the 20th Century." Journal of Career and Technical Education 22(2): 1-7.

Downey, R. G., and King, C.V. (1998). "Missing data in Likert ratings: a comparison of replacement methods." Journal of General Psychology 125(2): 175-191.

Dreher, G. F. (2003). "Breaking the glass ceiling: The effects of sex ratios and work-life programs on female leadership at the top." Human Relations, 56: 541-562.

Duehr, E. E., and Bono, J.E. (2006). "Men, Women and managers: Are stereotypes finally changing?" Personnel Psychology 59: 815-846.

Eagly, A. H. (1987). Sex Differences in Social Behavior: A Social Role Interpretations. Hillsdale, Erlbaum.

Eagly, A., Karan, S. and Makhijani, M. (1995). "Gender and the effectiveness of leaders: a meta-analysis." Psychological Bulletin 117(1): 125-145.

Eagly, A. H., and Karau, S.J. (2002). "Role congruity theory of prejudice toward female leaders." Psychological Review 109: 573-598.

Eccles, J. (1994). "Understanding women's educational and occupational choices." Psychology of Women Quarterly 18: 585-609.

Eccles, J. S. (1987). "Gender roles and women's achievement-related decisions." Psychology of Women Quarterly 11: 135-172.

Ehrhart, K. H., and Ziegert, J.C. (2005). "Why are individuals attracted to organizations?" Journal of Management 31(6): 901-919.

Eisenhart, M. A., and Finkel, E. (1998). Women's Science: Learning and succeeding from the margins, Chicago, University of Chicago Press.

Elacqua, T. C., Beehr, T.A., Hansen, C.P., and Webster, J. (2009). "Managers' beliefs about the glass ceiling: interpersonal and organisational factors." Psychology of Women Quarterly 33: 285-294.

Ellinger, A. D., Ellinger A. E., Yang, B., and Howton, S. W. (2002). " The relationship between the learning organization concept and firms' financial performance: An empirical assessment." Human Resource Development Quarterly 13: 5-21.

England, P., Farkas, G., Kilbourne, B.S., and Dou, T. (1988). "Explaining occupational sex segregation and wages: findings from a model with fixed effects." American Sociological Review 53: 544-558.

England, P. (2010). "The gender revolution: uneven and stalled." Gender and Society 24(2): 149-166.

Equal Pay Task Force (2001). Just Pay. Manchester, Equal Opportunities Commission.

Ericksen, J. A., and Schultheiss, D.E.P. (2009). "Women pursuing careers in trades and construction." Journal of Career Development 36(1): 68-89.

Erikson, E. H. (1968). Identity, youth and crisis. New York, Norton.

European Women's Lobby, (September 2009). Women, the financial and economic crisis - the urgency of a gender perspective, European Women's Lobby.

Evans, C. D., and Diekmann, A.B. (2009). "On motivated role selection: gender beliefs, distant goals, and career interest." Psychology of Women Quarterly 33: 235-249.

Evetts, J. (1990). Women in primary teaching: career contexts and strategies. London, Unwin Hyman.

Fan, P.-L., and Marini, M.M. (2000). "Influences on gender-role attitudes during the transition to adulthood." Social Science Research 29: 258-283.

Farmer, H. S. (1985). "Model of career and achievement motivation for women and men." Journal of Counseling Psychology 32(3): 363-390.

Farmer, H. S. (1987). "A multivariate model for explaining gender differences in career and achievement motivation." 16 (2): 5-9.

Farmer, H. S., and Chung, Y.B. (1995). "Variables related to career commitment, mastery motivation, and level of career aspirations among college students." Journal of Career Development 21(4): 265-278.

Farmer, H. S. (1997). "Women's motivation related to mastery, career salience and career aspirations: a multivariate model focusing on the effects of sex role socialization." Journal of Career Assessment 5(2): 355-381.

Faulkner, W. (2001). "The technology question in feminism: a view from feminist technology studies." Women's Studies International Forum 24(1): 79-95.

Faulkner, W., and Lie, M. (2007). "Gender in the information society: strategies of inclusion." Gender, technology and development 11(2): 157-177.

Faulkner, W. (2007). "'Nuts and bolts and people': gender-troubled engineering identities." Social Studies of Science 37(3): 331-356.

Feiertag, J., and Berge, Z.L. (2008). "Training generation N: how educators should approach the Net generation." Education and Training 50(6): 457-464.

Feldman, D. C., and Bolino, M.C. (1996). "Careers within careers: reconceptualizing the nature of career anchors and their consequences." Human Resource Management Review 6(2): 89-112.

Feldman, D. C., and Ng, T.W.H. (2007). "Careers: mobility, embeddedness, and success." Journal of Management 33(3): 350-377.

Fels, A. (2004). "Do women lack ambition?" Harvard Business Review 82(4): 50-60.

Fertman, C. I., and Chubb, N. H. (1992). "The effects of a psychoeducational program on adolescents' activity involvement, self-esteem, and locus of control." Adolescence 27: 517-526.

Feyerherm, A., and Vick, Y.H. (2005). "Generation X women in high technology: overcoming gender and generational challenges to succeed in the corporate environment." Career Development International 10(3): 216-227.

Finlayson, L. R., and Nazroo, J.Y. (1998). Gender inequalities in nursing careers. London.

Fiske, S. T., and Stevens, L. E. (1993). "What's so special about sex? Gender stereotyping and discrimination. Gender issues in contemporary society. ." Claremont Symposium on Applied Social Psychology 6: 173-196.

Flanagan, M. (2003). "Next level" Women's digital activism through gaming. Digital media revisited: theoretical and conceptual innovation in digital domains. G. Liestol, Morrison, A., and Rasmussen, T. Cambridge, Massachusetts, London, MIT: 359-388.

Flores, L. Y., and O'Brien, K.M. (2002). "The career development of Mexican American adolescent women: A test of social cognitive career theory." Journal of Counselling Psychology 49(1): 14-27.

Flores, L. Y., Navarro, R.L., Smith, J.L. & Ploszaj, A.M. (2006). "Testing a model of nontraditional career choice goals with Mexican American adolescent men." Journal of Career Assessment 14(2): 214-234.

Fondas, N. (1997). "Feminisation unveiled: management qualities in contemporary writing." Academy of Management Review 22: 257-282.

Forth, J. (2002). The gender pay gap: the research evidence. Gender Research Forum. NIESR. London, National Institute of Economic and Social Research.

Fortin, N. M. (2005). "Gender role attitudes and the labour-market outcomes of women across OECD Countries." Oxf Rev Econ Policy 21(3): 416-438.

Fouad, N. A., Smith, P.L. and Zao, K.E. (2002). "Across academic domains: extensions of the social cognitive career model." Journal of Counselling Psychology 49(2): 164-171.

Fouad, N. A., and Bryars-Winston, A.M. (2005). "Cultural context of career choice: meta-analysis of race/ethnicity differences." The Career Development Quarterly 53: 223-232.

Friedman, S. D., and Greenhaus, J.H. (2000). Work and family - allies or enemies? what happens when business professionals confront life choices? New York, Oxford University Press.

Fron, J., Fullerton, T., Morie, J.F., and Pearce, C. (2007). The hegemony of play. Situated play. Published in Proceedings, DiGRA: Situated Play, Tokyo, September 24-27, 2007.

Fuegen, K., and Biernat, M. (2002). " Re-examining the effects of solo status for women and men." Personality & Social Psychology Bulletin 28: 913-925.

Fullerton, T., Fron, J., Pearce, C. and Morie, J. (2008). Getting girls into the game: towards a "virtuous cycle". Beyond barbie and mortal kombat: new perspectives on gender and gaming. H. Kafai, Denner and Sun. Massachusetts, London, The MIT Press: 161-176.

Garcia-Retamero, R., and Lopez-Zafra, E. (2006). "Prejudice against women in male-congenial environments: perceptions of gender role congruity in leadership." Sex Roles 55: 51-61.

Gatrell, C. (2005). Hard labour: the sociology of parenthood, family life and career. Maidenhead, OPU.

Gelston, S. (2008). "Gen Y, Gen X and the baby boomers: workplace generation wars." www.cio.com. Accessed January 2009.

Gill, R. (2002). "Cool, creative and egalitarian? exploring gender in project-based new media work in Europe." Information, Communication and Society 5(1): 70-89.

Gillespie, R. (2000). "When no means no: disbelief, disregard and deviance as discourses of voluntary childlessness." Women's Studies International Forum 23(2): 223-234.

Gillespie, R. (2003). "Childfree and Feminine: understanding the gender identity of voluntary childless women." Gender & Society 17(1): 122-136.

Gist, M. E., and Mitchell, T.R. (1992). "Self-efficacy: a theoretical analysis of its determinants and malleability." Academy of Management Review 17: 183-211.

Glass, J. (1990). "The impact of occupational segregation on working conditions." Social Forces 68: 779-796.

Gooderham, P. N., and Nordhaug, O. (2002). "The decline of cultural differences in Europe." <http://geert-hofstede.international-business-center.com/gooderham.shtml>, 2009. Accessed January 2009.

Goodman, J., Fields, D.L., & Blum, T.C. (2003). "Cracks in the glass ceiling: in what kind of organisations do women make it to the top?" Group and Organisation Management 28(4): 475-501.

Gordon, M., and Denisi, A. (1995). "A re-examination of the relationship between union membership and job satisfaction." Industrial and Labour Relations Review 48: 222-236.

Gosling, S. D., Vazire, S., Srivastava, S., and John, O.P. (2004). "Should we trust web based studies? a comparative analysis of six preconceptions about internet questionnaires." American Psychologists 59(2): 93-104.

Gottfredson, G. D., and Duffy, R.D. (2008). "Using a theory of vocational personalities and work environments to explore subjective well-being." Journal of Career Assessment 16(1): 44-59.

Gottfredson, L. S. (1981). "Circumscription and compromise: a development theory of aspirations." Journal of Counselling Psychology 28(6): 545-579.

Gourdin, A. (2005). Game developers demographics: an exploration of workforce diversity, International Game Developers Association. New Jersey, USA. Available online: http://archives.igda.org/diversity/IGDA_DeveloperDemographics_Oct05.pdf Accessed March 2008.

Graner Ray, S. (2004). Gender inclusive game design: expanding the market. Massachusetts, Charles River Media Inc.

Gray, M., Kurihara, T., Hommen, L., and Feldman, J. (2007). "Networks of exclusion: job segmentation and social networks in the knowledge economy." Equal Opportunities International 26(2): 144-161.

Gray, M. P., and O'Brien, K.M. (2007). "Advancing the assessment of women's career choices: The Career Aspiration Scale." Journal of Career Assessment 15(3): 317-337.

Green, L., Miles, I. and Rutter, J. (2007). Hidden innovations in the creative sectors. A working paper for NESTA, Manchester institute for innovation research.

Greenberg, J., Solomon, S., and Pyszczynski, T. (1997). Terror management theory of self-esteem and cultural worldviews: empirical assessments and cultural refinements. Advances in Experimental Social Psychology. M. P. Zanna. San Diego, CA, Academic: 61-139.

Greene, A. L., and Wheatley, S. M. (1992). "I've got a lot to do and I don't think I'll have the time": Gender differences in late adolescents' narratives of the future." Journal of Youth and Adolescence 21: 667-686.

Greene, A.-M., Ackers, P., and Black, J. (2002). "Going against the historical grain: perspectives on gendered occupational identity and resistance to the breakdown of occupational segregation in two manufacturing firms." Gender, Work and Organization 9(3): 266-285.

Greenhaus, J. H., and Sklarew, N,D, (1981). "Some sources and consequences of career exploration." Journal of Vocational Behavior 18(1): 1-12.

Greenhaus, J. H., and Powell, G.N. (2003). "When work and family collide: deciding between competing role demands." Organizational Behavior and Human Decision Processes 90: 291-303.

Griffiths, M., Moore, K., and Richardson, H. (2007). "Celebrating heterogeneity?: a survey of female ICT professionals in England." Information, Communication and Society 10(3): 338-357.

Grzeda, M. (1999). "Career development and emerging managerial patterns." Journal of Career Development 25: 233-247.

Guerrier, Y., and Evans, C., Glover, J., and Wilson, C. (2009). "'Technical, but not very.....!': constructing gendered identities in IT-related employment." Work, Employment and Society 23(3): 494-511.

Gursoy, D., Maier, T.A., and Chi, C.G. (2008). "Generational differences: an examination of work values and generational gaps in the hospitality workforce." International Journal of Hospitality Management 27: 448-458.

Gushue, G. V., and Whitson, M.L. (2006). "The relationship of ethnic identity and gender role attitudes to the development of career choice goals among black and Latina girls." Journal of Counselling Psychology 53(3): 379-385.

Haines, L. (2004). "Why are there so few women in games? ." Research for Media Training North West September.

Hakim, C. (1991). "Grateful slaves and self-made women: fact and fantasy in women's work orientations." European Sociological Review 7(2).

Hakim, C. (1992). "Explaining trends in occupational segregation: the measurement, causes and consequences of the sexual division of labour." European Sociological Review 8(2): 127-52.

Hakim, C. (1995). "Five feminist myths about women's employment " British Journal of Sociology 46(3): 101-18.

Haller, M., and Hoellinger, F. (1994). "Female employment and the change of gender roles: The conflictual relationship between participation and attitudes in international comparison." International Sociology 9(1): 87-112.

Hamel, S. A. (2009). "Exit, voice, and sense making following psychological contract violations." Journal of Business Communication.

Hamilton, E. A., Gordon, J.R and Whelan-Barry, K.S. (2006). "Understanding the work-life conflict of never-married women without children." Women in Management Review 21(5): 393-415.

Hannover, B., and Kessels, U. (2004). "Self-to-prototype matching as a strategy for making academic choices: why high school students do not like maths and science." Learning and Instruction 14: 51-67.

Harper, E. P., Baldwin, R. G., Gansneder, B. G., and Chronister, J. L. and . (2001). "Full-time women faculty off the tenure track: profile and practice." Review of Higher Education 24: 237-257.

Harries, R., and Wilkinson, M.A. (2004). "Situating gender: students' perceptions of information work." Information Technology and People 17(1): 71-86.

Harris, A. C. (1994). "Ethnicity as a determinant of the sex role identity: a replication study of team selection for the Bem Sex Role Inventory." Sex Roles 31(3/4): 241-273.

Harris, J. (2001). The effect of computer games on young children -a review of the research. . RDS Occasional Paper No. 72. London, Home Office Research, Development and Statistics Directorate.

Harrison, B. G., Guy, R. F. and Lupfer, S. L. (1981). "Locus of control and self-esteem as correlates of role orientation in traditional and non-traditional women." Sex Roles 7: 1175-1187.

Harter, S. (1993). Causes and consequences of low self esteem in children and adolescents. Self esteem: the puzzle of low self-regard. R. Baumeister. New York, Plenum Press: 87-116.

Hartman, R. O., and Betz, N.E. (2007). "The five-factor model and career self-efficacy: general and domain-specific relationships." Journal of Career Assessment 15(2): 145-161.

- Hartmann, T., and Klimmt, C. (2006). "Gender and computer games: exploring females' dislikes." Journal of Computer-Mediated Communication 11: 910-931.
- Harvey, A. M. (2005). "Becoming entrepreneurs: intersections of race, class, and gender at the black beauty salon." Gender & Society 19: 789-808.
- Hattie, J. (1992). Self-concept. Hillsdale, NJ, Lawrence Erlbaum Associates Inc.
- Hayes, E. (2007). "Gendered identities at play: Case studies of two women playing morrowind." Games and Culture 2(1): 23-48.
- Heeter, C., Egidio, R., Mishra, P., Winn, B., and Winn, J. (2009). "Alien Games: do girls prefer games designed by girls?" Games and Culture 4(1): 74-100.
- Heilman, M. E. (1983). "Sex bias in work settings: the lack of fit model." Research in Organizational Behavior 5: 269-298.
- Hesketh, B., Durant, C. and Pryor, R. (1990). "Career compromise: a test of Gottfredson's (1981) theory using a policy-capturing procedure." Journal of Vocational Behavior 42: 315-32.
- Hewson, C. (2003). "Conducting research on the Internet." The Psychologist 16(6): 290-293.
- Hill, J. E., Ferris, M., and Baker, R.Z. (2004). "Beyond the mommy track: the influence of new-concept part-time work for professional women on work and family." Journal of Family and Economic Issues 25(1): 121-136.
- Hirschy, A. J., and Morris, J.R. (2002). "Individual differences in attributional style: the relational influence of self-efficacy, self-esteem and sex role identity." Personality and Individual Differences 32: 183-196.

Hirshfield, L. E. (2010). "'She Won't Make Me Feel Dumb': Identity Threat in a Male-Dominated Discipline." International Journal of Gender, Science and Technology 2(1): 6-24.

Hoffman, R. M., and Borders, L.D. (2001). "Twenty-Five Years after the Bem Sex-Role Inventory: A Reassessment and New Issues Regarding Classification Variability." Measurement and Evaluation in Counseling and Development 34(1): 39-55.

Hofstede, G. (1984). Culture's Consequences. London, Sage.

Hofstede, G. (2001). Culture's consequences: comparing values, behaviors, institutions and organisations across nations. London, Sage.

Hogg, M. A., and Cooper, J. (2003). The SAGE handbook of social psychology. New Delhi, Sage.

Hogue, M., DuBois, L.Z., and Fox-Cardamone, L. (2010). "Gender differences in pay expectations: the role of job intention and self-view." Psychology of Women Quarterly 34: 215-227.

Hoi, M. M.-N., and Hiebert, B. (2005). "Career development of first-year University students: A test of Astin's career development model." Canadian Journal of Career Development 4(2): 22-31.

Holland, J. L. (1973). Making Vocational Choice: A theory of careers. Englewood Cliffs, NJ, Prentice-Hall.

Holt, C. L., and Ellis, J.B. (1998). "Assessing the current validity of the Bem Sex-Role Inventory." Sex Roles 39(11/12): 929-941.

Hough, L. M. (2003). Emerging trends and needs in personality research and practice: Beyond main effects. Personality and work: Reconsidering the role of

personality in organisations. M. R. Barrick, and Ryan, A.M. San Francisco, Jossey-Bass: 289-235.

Howson, J. (1998). Where Have All the Young Men Gone? Hot data. The Times Educational Supplement: 22.

Hoyle, R. H. (1995). Structural equation modelling: concepts, issues, and applications : an introduction focusing on AMOS.. Thousand Oaks, CA, Sage Publications.

Hughes, E. L., and Parkes, K.R. (2007). "Work hours and well-being: the roles of work-time control and work-family interference." Work and Stress 21(3): 264-278.

Hultin, M. (2003). "Some take the glass escalator, some hit the glass ceiling?: career consequences of occupational sex segregation." Work and Occupations 30 (1): 30-61.

Ickes, W., and Layden, M.A. (1978). Attributional styles. New directions in attribution research J. H. Harvey, Ickes, W. and Kidd, R.F. Hillside NJ, Lawrence Erlbaum Associates. 2.

Igbaria, M., and Greenhaus, J.H. (1991). "Career orientations of MIS employee: an empirical analysis." MIS Quarterly 15(2): 22-36.

IGDA (2004). Quality of life white paper, International Game Developers Association. New Jersey, USA. [http://archives.igda.org/diversity/IGDA Qualityoflife Oct05.pdf](http://archives.igda.org/diversity/IGDA%20Qualityoflife%20Oct05.pdf) Accessed March 2008.

Ilies, R., and Judge T. A. (2004). " An experience-sampling measure of job satisfaction and its relationships with affectivity, mood at work, job beliefs, and general job satisfaction." European Journal of Work and Organizational Psychology 13(3): 367-389.

Innstrand, S. T., Langballe, E.M., Falkum, E., Espnes, G.A. and Aasland, O.G. (2009). "Gender-specific perceptions of four dimensions of the work/family interaction." Journal of Career Assessment 17(4): 402-416.

Inzlicht, M., and Ben-Zeev, T. (2000). "A threatening intellectual environment: Why females are susceptible to experiencing problem-solving deficits in the presence of males." Psychological Science 11: 365-371.

Ireland, M. S. (1993). Reconceiving women: separating motherhood from female identity. New York, Guilford Press.

Ituma, A., and Simpson, R. (2007). "Moving beyond Schein's typology: individual career anchors in the context of Nigeria." Personnel Review 36(6): 978-995.

James, K., and Cardador, J. (2007). "Cognitions about technology and science: a measure and its relevance to career decisions." Journal of Career Assessment 15(4): 463-482.

Javidan, M., Bemmels, B., Devine, K. S. and Dastmalchian, A. (1995). "Supervisor and subordinate gender and the acceptance of supervisors as role models." Human Relations, 48: 1271-1284.

Jogula, U. D., and Wood, G.J. (2006). "The role of leadership theory in raising the profile of women in management." Equal Opportunities International 25(4): 236-250.

Johns, J. (2006). "Video games production networks: value capture, power relations and embeddedness." Journal of Economic Geography 6: 151-180.

Johnson, M., and Helgeson, V. S. (2002). "Sex differences in response to evaluative feedback: a field study." Psychology of Women Quarterly 26: 245-251.

Johnson, N. B., and Scandura, T.A. (1994). "The effect of mentorship and sex-role style on male/female earnings." Industrial Relations 33.

Johnson, W., and Bouchard, T.J. (2009). "Linking abilities, interests, and sex via latent class analysis." Journal of Career Assessment 17(1): 3-38.

Jome, L. M., and Tokar, D.M. (1998). "Dimensions of masculinity and major choice traditionality." Journal of Vocational Behavior 52: 120-134.

Jordan, C. H., Spencer, S. J., Zanna, M. P., Hoshi-Browne, E. and Correll, J. (2003). "Secure and defensive high self-esteem." Journal of Personality and Social Psychology 85: 969-978.

Joreskog, K. G., and Sorbom, D. (1989). Lisrel 7: a guide to the program and applications. Chicago, SPSS.

Jorgenson, J. (2002). "Engineering selves: negotiating gender and identity in technical work " Management Communication Quarterly 15(3): 350-380.

Jozefowicz, D. M., Barber, B.L., and Eccles, J.S. (1993). Adolescent work-related values and beliefs: gender differences and relation to occupational aspirations. Biennial meeting of the society for research on child development. New Orleans.

Judge, T. A., Locke, E.A., and Durham, C.C. (1997). "The dipositional causes of job satisfaction: a core evaluation approach." Research in Organizational Behavior 19: 151-188.

Kang, M. (2003). "The managed hand: the commercialization of bodies and emotions in Korean immigrant-owned nail salons." Gender & Society 17: 820-39.

Kanter, R. (1977). Men and women of the corporation. New York, Basic Books.

Katsurada, E., and Sugihara, Y. (1999). "A preliminary validation of the Bem Sex Role Inventory in Japanese culture." Journal of Cross-Cultural Psychology 30(5): 641-645.

Kaufman, G. (2000). "Do gender role attitudes matter?: family formation and dissolution among traditional and egalitarian men and women." Journal of Family Issues 21(1): 128-144.

Kawakami, C., White, J.B. & Langer, E.J. (2000). "Mindful and Masculine: freeing women leaders from the constraints of gender roles." Journal of Social Issues 56(1): 49-63.

Keene, J. R., and Reynolds, J. R. (2005). "The job costs of family demands: Gender differences in negative family-to-work spill over." Journal of Family Issues 26: 275-299.

Kehoe, C., and Pitkow, J. (1996). "Surveying the territory: GVU's five WWW user surveys." The World Wide Web Journal (Online) 1 (3): 77-84.

Kelan, E. K. (2007). "Tools and toys: communicating gendered positions towards technology." Information, Communication and Society 10(3): 358-383.

Kelan, E. K. (2008). "Emotions in a rational profession: the gendering of skills in ICT work." Gender, Work and Organization 15(1): 49-71.

Keller, J. (2002). "Blatant stereotype threat and women's math performance: self-handicapping as a strategic means to cope with obtrusive negative performance expectations." Sex Roles 47(3/4): 193-198.

Kemkes-Grottenthaler, A. (2003). "Postponing or rejecting parenthood? Results of a survey among female academic professionals." Journal of Biosocial Science 35: 213-226.

Kendler, K. S., Gardner, C. O. and Prescott, C. A. (1998). "A population-based twin study of self-esteem and gender." Psychological Medicine 28: 1403-1409.

Kidd, J. M., and Green, F. (2006). "The careers of research scientists: predictors of three dimensions career commitment and intention to leave science." Personnel Review 35(3): 229-251.

Kitzinger, J., Chimba, M., Williams, A., Haran, J., and Boyce, T. (2007). Gender stereotypes and expertise in the press: how newspapers represent male and female scientists. Research Briefing. UK resource centre for women in science, engineering and technology. 5.

Kling, K. C., Hyde, J. S., Showers, C. J. and Buswell, B. N. (1999). "Gender differences in self-esteem: a meta-analysis." Psychological Bulletin 125: 470-500.

Konrad, A. M., and Harris, C. (2002). "Desirability of the Bem Sex-Role Inventory items for women and men: a comparison between African Americans and European Americans." Sex Roles 47(5/6): 259-271.

Korman, A. K. (1966). "Self-esteem variable in vocational choice." Journal of Applied Psychology 50: 479-486.

Kottke, J. L., and Agars, M.D. (2005). "Understanding the processes that facilitate and hinder efforts to advance women in organizations." Career Development International 10(3): 190-202.

Kram, K. E., and Hampton, M. M. (1998). When women lead: the visibility - vulnerability spiral. The Psychodynamics of Leadership. E. Klein, Gabelnick, F., and Herr, P. Madison, CT, Psychosocial Press.

Krotoski, A. (2004). "Chicks and joysticks: an exploration of women and gaming." Entertainment and Leisure Software Publishers Association (ELSPA) White paper.

Kuhnen, U., and Oyserman, D. (2002). "Thinking about the self influences thinking in general: cognitive aspects of salient self-concept." Journal of Experimental Psychology 38: 492-499.

Kundu, S. C., and Rani, S. (2007). "Human resources self-esteem across gender and categories: a study." Industrial Management and Data Systems 107(9): 1366-1390.

Kupperschmidt, B. R. (2000). "Multigeneration employees: strategies for effective management." Health Care Manager 19(1): 65-76.

Kvande, E. (1999). 'In the belly of the beast': constructing femininities in engineering organizations. 6: 305-328.

Lagesen, V. A. (2007). "The strength of numbers: strategies to include women into computer science." Social Studies of Science 37(1): 67-92.

Lambert, T. W., Davidson, J.M., Evans, J., and Goldacre, M.J. (2003). "Doctors reasons for rejecting initial choices of specialties as long term careers." Medical Education 37: 312-318.

Lamsa, A., and Sintonen, T. (2001). "A discursive approach to understanding women leaders in working life." Journal of Business Ethics 34: 255-267.

Lane, N., & Piercy, N.F. (2003). "The ethics of discrimination: organisational mindsets and female employment disadvantage." Journal of Business Ethics 44: 313 - 325.

Larsen, R. J., and Seidman, E. (1986). "Gender schema theory and sex role inventories: some conceptual and psychometric considerations." Journal of Personality and Social Psychology 50(1): 205-211.

Latham, G. P., and Pinder, C.C. (2005). "Work motivation theory and research at the dawn of the twenty-first century." Annual Review of Psychology 56: 485-516.

Laufer, J. (2000). French women managers: a search for equality but enduring differences. Women in Management: current issues M. Davidson, and Burke, R.J. London, Sage. 2: 26-40.

Lauver, K., and Kristof-Brown, A. (2001). "Distinguishing between employees' perceptions of person-job and person-organization fit." Journal of Vocational Behavior 59: 454-470.

Leary, M. R., and Baumeister, R. (2000). The nature and function of self-esteem: sociometer theory. Advances in experimental social psychology. M. P. Zanna. San Diego, CA, Academic Press. 32: 1-62.

Lease, S. H. (2003). "Testing a model of men's non-traditional occupational choices." Career Development Quarterly 51: 244-258.

Leatherby, G., and Cotterill, P. (2001). "Doubly burdened." AUTLOOK 129.

Lemkau, J. P. (1979). "Personality and background characteristics of women in male-dominated occupations: a review." Psychology of Women Quarterly 4(2): 221-240.

Lent, R. W., Brown, S.D., and Hackett, G. (1994). "Toward a unifying social cognitive theory of career and academic interest, choice and performance." Journal of Vocational Behavior 45: 79-122.

Lent, R. W., Brown, S. D., & Hackett, G. (2000). "Contextual supports and barriers to career choice: a social cognitive analysis." Journal of Counselling Psychology 47(1): 36-49.

Lent, R. W., Brown, S.D., Brenner, B., Chopra, S.B., Davis, T., Talleyrand, R. and Suthakaran, V. (2001). "The role of contextual supports and barriers in the choice of math/science educational options: a test of social cognitive hypotheses." Journal of Counselling Psychology 48(4): 474-483.

Lent, R. W., Brown, S.D., Schmidt, J., Brenner, B., Lyons, H. and Treistman, D. (2003). "Relation of contextual supports and barriers to choice behaviour in engineering majors: test of alternative social cognitive models." Journal of Counselling Psychology 50(4): 458-465.

Lent, R. W., Brown, S.D., Sheu, H-B., Schmidt, J., Brenner, B., Wilkins, G., Gloster, C.S., Schmidt, L.C., Lyons, H. and Treistman, D. (2005). "Social cognitive predictors of academic interests and goals in engineering: utility for women and students at historically black universities." Journal of Counselling Psychology 52(1): 84-92.

Lent, R. W., and Brown, S.D. (2006). "On conceptualizing and assessing social cognitive constructs in career research: a measurement guide." Journal of Career Assessment 14(1): 12-35.

Lent, R. W., Singley, D., Sheu, H-B., Schmidt, J.A., and Schmidt, L.C. (2007). "Relation of social-cognitive factors to academic satisfaction in engineering students." Journal of Career Assessment 15(1): 87-97.

Lent, R. W., Sheu, H-B., Gloster, C.S., and Wilkins, G. (2010). "Longitudinal test of the social cognitive model of choice in engineering students at historically Black universities." Journal of Vocational Behavior 76: 387-394.

Lent, R. W., Paixao, M.P., da Silva, J.T., and Leitao, L.M. (2010). "Predicting occupational interests and choice aspirations in Portuguese high school students: a test of social cognitive career theory." Journal of Vocational Behavior 76(244-251).

Lepper, M., and Greene, D. (1978). Over justification research and beyond: toward a means-ends analysis of intrinsic and extrinsic motivation. The hidden costs of reward. M. Lepper, and Greene, D. Hillsdale, NJ, Erlbaum: 109-148.

Lerman, N. E., Oldenzil, R., and Mohun, A.P. (2003). Gender and Technology: a reader. Baltimore, MD, John Hopkins University Press.

Letherby, G. (2002a). "Challenging dominant discourses: identity and change and the experience of infertility and involuntary childlessness" Journal of Gender Studies 11(3): 278-288.

Letherby, G. (2002b). Childless and bereft? stereotypes and realities in relation to 'voluntary' and 'involuntary' childlessness and womanhood. Sociological Inquiry 72(1): 7-20.

Lie, M. (2003). He, she and IT revisited: new perspectives on gender and the information society Oslo, Gyldenhal Akademisk.

Liff, S., and Ward, K. (2001). "Distorted views through the glass ceiling: the construction of women's understandings of promotion and senior management positions." Gender, Work and Organization 8(1): 19-36.

Lin, H. (2005). Gendered gaming experience in social space: from home to internet cafe. DiGRA (Digital Games Research Association) 2005 Conference: Changing Views – Worlds in Play, 2005.

Lindley, L. D. (2005). "Perceived barriers to career development in the context of social cognitive career theory." Journal of Career Assessment 13(3): 271-287.

Lipsett, A. (2008). Under-fives have almost no male teachers: Recruitment drive fails to redress chronic gender imbalance in primary sector. The Guardian. 7th August, 2008.

Lobel, S. A., and St Clair, L. (1992). "Effects of family responsibilities, gender and career identity salience on performance outcomes." The Academy of Management Journal 35(5): 1057-1069.

Lobel, T., Mashraki-Pedhatzur, S., Mantzur, A. and Libby, S. (2000). "Gender discrimination as a function of stereotypic and counter stereotypic behaviour: a cross-cultural study." Sex Roles 43: 669-686.

Locke, E. A., and Henne, D. (1986). Work motivation theories. International review of industrial and organizational psychology. C. L. Cooper, and Robertson, I. New York, Wiley: 1-36.

Loehlin, J. C. (1992). Latent variable models: an introduction to factor, path and structural analysis. New Jersey, Lawrence Erlbaum Associates.

London, M., and Stumpf, S.A. (1982). Managing Careers. Reading, MA, Addison-Wesley.

Long, B. C. (1989). "Sex-role orientation, coping strategies, and self-efficacy of women in traditional and non traditional occupations." Psychology of Women Quarterly 13: 307-324.

Lorenzi-Cioldi, F. (1996). "Psychological androgyny: a concept in search of lesser substance. Towards the understanding of the transformation of a social representation." Journal for the Theory of Social Behaviour 26(2): 137-155.

Loughrey, M. (2008). "Just how male are male nurses?" Journal of Clinical Nursing 17: 1327-1334.

Luhtanen, R., and Crocker, J. (1992). "A collective self-esteem scale: self-evaluation of one's social identity " Personality and Social Psychology Bulletin 18(3): 302-318.

Lupton, B. (2000). "Maintaining masculinity: men who do 'women's work'." British Journal of Management 11: 33-48.

Lynch, K. D. (2007). "Modelling role enactment: Linking role theory and social cognition." Journal for the Theory of Social Behaviour 37(4): 379-399.

MacDermid, S. M., and Lees, M.D., Buck, M., and Williams, M.L. (2001). "Alternative work arrangements among professionals and managers: rethinking career development and success." Journal of Management Development 20(4): 305-317.

MacDougall, G. (1997). "Caring-a masculine perspective." Journal of Advanced Nursing 25(4): 809-813.

- Mahalik, J. R., Perry, C.J., Coonerty-Femiano, A., Catraio, C. & Land, L.N. (2006). "Examining conformity to masculinity norms as a function of RISEC vocational interests." Journal of Career Assessment 14(2): 203-213.
- Manrai, L. A., and Manrai, A. K. (1995). "Effects of cultural-context, gender, and acculturation on perceptions of work versus social/leisure time usage." Journal of Business Research 32: 115-128.
- Marshall, V., and Bonner, D. (2003). "Career anchors and the effects of downsizing: implications for generations and cultures at work: a preliminary investigation." Journal of European Industrial Training 27(6): 281-91.
- Martis, R. G., and Jansz, J. (2004). The representation of gender and ethnicity in digital interactive games. International Communication Association. L. A. online. New Orleans Sheraton, New Orleans.
- Mattei, N. J., and Jennings, L. (2008). "Pit stops and scenic routes: how to aid women to stay on track in their careers." Leadership and Management in Engineering January: 27-31.
- Maume, D. J. (2006). "Gender differences in taking vacation time." Work and Occupations 33(3): 161-190.
- Mayrhofer, W., Steyrer, J., Meyer, M., Strunk, G., Schiffinger, M., and Iellatchitch, A. (2005). "Graduates career aspirations and individual characteristics." Human Resource Management Journal 15(1): 38-56.
- McCarthy, M. (2004). Girlfriends in high places: how women's networks are changing the workplace. Demos.
- McGlone, M. S., Aronson, J., and Kobrynowicz, D (2006). "Stereotype threat and gender in political knowledge." Psychology of Women Quarterly 30 392-398.

McGlone, M. S., and Aronson, J. (2006). "Stereotype threat, identity salience, and spacial reasoning." Journal of Applied Developmental Psychology 27: 486-493.

McIlwee, J. S., and Robinson, J.G. (1992). Women in engineering: Gender, Power and Workplace Culture. Albany, State University of New York Press.

McIntyre, R. B., Paulon, R.M., and Lord, C.G. (2003). "Alleviating women's mathematics stereotype threat through salience of group achievements." Journal of Experimental Social Psychology 39: 83-90.

McWhirter, E. H., Hackett, G., and Bandalos, D. L. (1998). "A causal model of the educational plans and career expectations of Mexican American high school girls." Journal of Counseling Psychology 45: 166-181.

Mead, G. H. (1934). Mind, Self and Society. Chicago, University of Chicago Press.

Medsker, G., Williams, L., and Holahan, P. (1994). "A review of current practices for evaluating causal models in organizational behavior and human resources management research " Journal of Management 20(2): 439-464.

Mercier, E. M., Barron, B., and O'Connor, K.M. (2006). "Images of self and others as computer users: the role of gender and experience." Journal of Computer Assisted Learning 22: 335-348.

Michie, S., and Nelson, D.L. (2006). "Barriers women face in information technology careers: self-efficacy, passion and gender biases." Women in Management Review 21(1): 10-27.

Miller, J., and Chamberlin, M. (2000). "Women are teachers, men are professors: a study of student perceptions." Teaching Sociology 28(4): 283-298.

Miller, L., Neathey, F., Pollard, E. and Hill, D. (2004). "Occupational segregation, gender gaps and skill gaps." Equal Opportunities Commission Working paper series 15.

Moore, L. M. and A. U. Rickel (1980). "Characteristics of women in traditional and non-traditional managerial roles." Personnel Psychology 33(2): 317-333.

Moors, G. (2003). "Estimating the reciprocal effect of gender role attitudes and family formation: a log-linear path model with latent variables." European Journal of Population 19: 199-221.

Morrell, C. (2000). "Saying no: women's experiences with reproductive refusal." Feminism & Psychology 10(3): 313-322.

Morris, M., Neson, J., Rickinson, M., Stoney, S.M. and Benefield, P. (1999). A literature review of young people's attitudes towards education, employment and training. Research Report No. 170. DfEE. Sheffield, DfEE.

Morris, P. J. (2005). "Why we need more women in surgery." Annual Royal College Surgery England 87: 123-125.

Moss-Racusin, C. A., and Rudman, L.A. (2010). "Disruptions in women's self-promotion: the backlash avoidance model." Psychology of Women Quarterly 34: 186-202.

Mumford, K. and P. N. Smith (2007). "The gender earnings gap in Britain: including the workplace." The Manchester School 7(6): 653-672.

Natale, M. J. (2002). "The effect of a male-orientated computer gaming culture on careers in the computer industry." Computers and Society: 24-31.

Nauta, M. M., and Epperson, D. L. (2003). "A longitudinal examination of the social-cognitive model applied to high school girls' choices of non traditional college majors and aspirations." Journal of Counseling Psychology 50: 448-457.

Nauta, M. M. and J. H. Kahn (2007). "Identity status, consistency and differentiation of interests and career decision self-efficacy." Journal of Career Assessment 15(1): 55-65.

Nelson D. L. and Burke, R. J. (2000). "Women executives: health, stress and success." Academy of Management Executive 14(2): 107-121.

Neufeld, J. E., Rasmussen, H.N., Lopez, S.J., Ryer, J.A., Magyar-Moe, J.L., Ford, A.I., Edwards, L.M., and Bouwkamp, J.C. (2006). "The engagement model of person-environment interaction." The Counselling Psychologist 34(2): 245-259.

Neumayer, L., Kaiser, S., Anderson, K., Barney, L., Cuet, M.D., Jacobs, D., Lynch, T. and Gazak, C. (2002). "Perceptions of women medical students and their influence on career choice " The American Journal of Surgery 183: 146-50.

Newell, H., and Dopson, S. (1996). "Muddle in the middle: organizational restructuring and middle management careers." Personnel Review 25(4): 4 - 20.

Newell, S. (2002). Creating the healthy organisations: well-being, diversity and ethics at work. London, Thomson Leaning.

Ng, T. W. H., Eby, L.T., Sorensen, K.L., and Feldman, D.C. (2005). "Predictors of objective and subjective career success: A meta analysis." Personnel Psychology 58: 367-408.

Nieva, V. F., and Gutek, B. (1981). "Sex effects on evaluation." Academy of Management Review 7: 267-276.

Noonan, M. C., Estes, S.B., and Glass, J.L. (2007). "Do workplace flexibility policies influence time spent in domestic labour?" Journal of Family Issues 28(2): 263-288.

Nunnally, J. C. (1978). Psychometric theory. New York, McGraw-Hill.

O'Brien, K. M., and Fassinger, R. E. (1993). "A causal model of the career orientation and career choice of adolescent women." Journal of Counselling 40: 456-469.

Oakley, J. G. (2000). "Gender-based barriers to senior management positions: Understanding the scarcity of female CEOs." Journal of Business Ethics 27: 321-334.

O'Brien, K. M. (1996). "The influence of psychological separation and parental attachment on the career development of adolescent women." Journal of Vocational Behavior 48: 257-274.

Omar, A., and Davidson, M.J. (2001). "Women in management: a comparative cross-cultural overview." International Journal of Cross Cultural Management 8(3/4): 35-67.

O'Neil, D. A., and Bilimoria, D. (2005). "Women's career development phases idealism, endurance and reinvention." Career Development International 10(3): 168-189.

ONS (2003). Labour Force Survey, ONS, Office for National Statistics.

ONS (2007). Labour Force Survey. ONS, Office for National Statistics.

Oosterwegel, A., Littleton, K. and Light, P. (2004). "Understanding computer-related attitudes through an idiographic analysis of gender and self-representations." Learning and Instruction 14: 215-233.

O'Reilly, C. A., Chatman, J., and Caldwell, D.F. (1991). "People and organizational culture: a profile comparison approach assessing person-organization fit." The Academy of Management Review 34(3): 487-516.

Organ, D. W., and Near, J.P. (1985). "Cognitive vs. affect measures of job satisfaction." International Journal of Psychology 20: 241-254.

Ossana, S. M., Helms, J.E., and Leonard, M.M. (1992). "Do 'womanist' identity attitudes influence college women's self esteem and perceptions of environmental bias?" Journal of Counselling and Development 70: 402-408.

Ostroff, C. (1992). "The relationship between satisfaction, attitudes, and performance: an organizational level analysis." Journal of Applied Psychology 77(6): 963-974.

Oswald, D. L., and Lindstedt, K. (2006). "The content and function of gender self-stereotypes: an exploratory investigation " Sex Roles 54: 447-458.

Oswald, D. L. (2008). "Gender stereotypes and women's reports of liking and ability in traditionally masculine and feminine occupations." Psychology of Women Quarterly 32: 196-203.

Oxford Economics (2008). The economic contribution of the UK games industry: final report. Oxford Economics. Available online: <http://oef.com/FREE/PDFS/GAMESIMPACT.PDF>. Accessed February, 2010.

Ozkan, T., and Lajunen, T. (2005). "Masculinity, femininity, and the Bem Sex Role Inventory in Turkey." Sex Roles 52(1/2): 103-110.

Panteli, N., Stack, J., and Ramsay, H. (2001). "Gendered patterns in computing work in the late 1990s." New Technology, Work and Employment 16(1): 3-16.

Pearce, C. (2008). "The truth about baby boomer gamers: a study of over-forty computer game players." Games and Culture 3(2): 142-174.

Pelletier, C. (2008). Gaming in context: how young people construct their gendered identities in playing and making games. Beyond barbie and mortal kombat: new perspectives on gender and gaming. Y. B. Kafai, Heeter, C., Denner, J., and Sun, J.Y. Massachusetts, London, The MIT Press: 145-160.

Peng, T. K. (2006). "Construct validation of the Bem Sex Role Inventory in Taiwan." Sex Roles 55: 843-851.

Perrewe, P. L., and Nelson, D.L. (2004). "Gender and career success: the facilitative role of political skill." Organisational Dynamics 33(4): 366-378.

Perrone, K. M., Wright, S.L., and Jackson, Z.V. (2009). "Traditional and non traditional gender roles and work family interface for men and women." Journal of Career Development 36(1): 8-24.

Perrone, K. M. (2009). "Traditional and non traditional work and family roles for women and men." Journal of Career Development 36(1): 3-7.

Perrons, D. (1999). "Flexible working patterns and equal opportunities in the European Union: conflict or compatibility?" The European Journal of Women's Studies 6: 391-418.

Perrons, D. (2003). "The new economy and the work-life balance: conceptual explorations and a case study of new media." Gender, Work and Organization 10(1): 65-93.

Perryman, R. D. (2004). "Healthy Attitudes: Quality of Working Life in the London NHS, 2000-2002." Retrieved 20/04/2005.

Peterson, H. (2010). "The gendered construction of technical self-confidence: women's negotiated positions in male dominated, technical work settings." International Journal of Gender, Science and Technology 2(1): 65-88.

Pickard, J., and Strough, J. (2003). "The effects of same-sex and other-sex contexts on masculinity and femininity." Sex Roles 48(9/10): 421-432.

Pierce, J. L., Gardner, D. G., Cummings. L. L. and Dunham, R. B. (1989). "Organization-based self-esteem: constructing definition, measurement and validation." Academy of Management Journal 32: 622-648.

Pierce, J. L., and Gardner, D.G. (2004). "Self-esteem within the work and organizational context: a review of the organization-based self-esteem literature." Journal of Management 30(5): 591-622.

Plant, S. (1998). Zeros and ones: digital women and the new technoculture. London, Fourth Estate.

Platman, K., and Taylor, P. (2004) Workforce ageing in the new economy: a comparative study of information technology employment.
http://www.wane.ca/endpdf/Platman_A_Comparative_Study_of_information_technology_Employment.pdf. Salford University.

Poggio, B. (2000). "Between bytes ad bricks: gender culture in work contexts." Economic and Industrial Democracy 21(3): 381-402.

Powell, A., Bagihole, B., and Dainty, A. (2009). "How women engineers do and undo gender: consequences for gender equality." 16 4(411-428).

Powell, G. N. (1999). Examining the intersection of gender and work Handbook of gender and work. G. N. Powell. London, Sage: ix-xx.

Powell, G. N., Butterfield, A.D., and Parent, J.D. (2002). "Gender and managerial stereotypes: have the times changed?" Journal of Management 26(2): 177-193.

Powell, G. N., and Butterfield, D.A. (2003). "Gender, gender identity, and aspirations to top management." Women in Management Review 18(1/2): 88-96.

Powell, G. N., and Greenhaus, J.H. (2010). "Sex, gender and the work-to-family interface: exploring negative and positive interdependencies " Academy of Management Journal 53(3): 513-534.

Pratt, A. (2000). "New media, the economy and new spaces." Geoforum 31(425-436).

Probert, B. (2005). "I just couldn't fit it in' gender and unequal outcomes in academic careers." Gender, Work and Organisation 12(1): 50-72.

Provenzo, E. F. (1991). Video kids: making sense of Nintendo. Cambridge, Harvard University Press.

Quigley, N. R., and Tymon, W.G. (2006). "Toward an integrated model of intrinsic motivation and career self-management." Career Development International 11(6): 522-543.

Ragins, B. R. (1989). "Barriers to mentoring: The female manager's dilemma." Human Relations, 42,: 1-22.

Ragins, B. R., & Scandura, T.A., (1994). "Gender differences in expected outcomes of mentoring relationships." Academy of Management Journal 37: 957-971.

Ramsay, K., and Letherby, G. (2006). "The experience of academic non-mothers in the gendered university." Gender, Work and Organization 13(1): 25-44.

Rapoport, R., Bailyn, L., Fletcher, J. K., and Pruitt, B. H. (2002). Beyond work-family balance: advancing gender equity and workplace performance. San Francisco, Jossey Bass.

Raskin, P. M. (2006). "Women, work and family: three studies of roles and identity among working mothers." American Behavioral Scientist 49(10): 1354-1381.

Raziano, D. B., Jayadevapa, R., Valenzuela, D., Weiner, M., and Lavizzo-Mourey, R. (2001). "E-mail versus conventional postal mail survey of geriatric chiefs." Then Gerontologist 41: 799-804.

Reskin, B., and McBrier, D.B. (2000). "'Why not ascription? organizations' employment of male and female managers." American Sociological Review 65: 210-33.

Reskin, B. F., and Roos, P.A. (1990). Job queues, gender queues: explaining women's inroads into male occupations. Philadelphia, Temple University Press.

Revill, J. (2007). Pregnancy 'forcing 30,000 out of work' new study reveals British women suffer largest pay gap in Europe. The Observer. London, The Guardian. 2nd September, 2007.

Reynolds, J., and Aletraris, L. (2007). "Work-family conflict, culture and hour mismatches in Australia." Journal of Family Issues 28(6): 749-772.

Ridgeway, C. L., and Jacobson, C.K. (1979). "The development of female role ideology: impact of personal confidence during adolescence." Youth and Society 10: 297-315.

Riesman, B. J. (1987). "Intimate relationships from a microstructural perspective: men who mother." Gender & Society 1: 6-32.

Riggio, H. R. and S. J. Desrochers (2006). "Maternal employment relations with young adults work and family expectations and self-efficacy." American Behavioral Scientist 49(10): 1328-1353.

Rigotti, T., Schyns, B., and Mohr, G. (2008). "A short version of the occupational self-efficacy scale: structural and construct validity across five countries." Journal of Career Assessment 16(2): 238-255.

Roberts, T. A., and Nolen-Hoeksema, S. (1989). "Sex differences in reactions to evaluative feedback." Sex Roles 21: 725-747.

Robie, C., Ryan, A. M., Schmieder, R. A., Parra, L. F., and Smith, P. C. (1998). "The relation between job level and job satisfaction." Group and Organization Management 23: 470-495.

Robins, R. W., Hendin, H.M., and Trzesniewski, K.H. (2001). "Measuring global self-esteem: construct validation of a single-item measure and the Rosenberg self-esteem scale." Personality and Social Psychology Bulletin 27(2): 151-161.

Robins, R. W., Tracy, J.L., Trzesniewski, K.H., Potter, J., and Gosling, S.D. (2001). "Personality correlates of self-esteem " Journal of Research in Personality 35: 463-482.

Robinson, S. L. (1996). "Trust and breach of the psychological contract." Administrative Science Quarterly 41: 574-599.

Roccas, S., and Brewer, M.B. (2002). "Social identity complexity." Personality and Social Psychology Review 6: 8-106.

Rogers, M. E., Creed, P.A., and Searle, J. (2009). "The development and initial validation of social cognitive career theory instruments to measure choice of medical speciality and practice location." Journal of Career Assessment 17(3): 324-337.

Rommès, E., Overbeek, G., Scholte, R., Engles, R., and De Kemp, R. (2007). "I'm not interested in computers': gender-based occupational choices of adolescents." Information, Communication and Society 10(3): 299-319.

Rommès, E., van Oost, E., and Oudshoorn, N. (Gender in the design of the digital city of Amsterdam). "1999." Information, Communication and Society 2(4): 476-495.

Rose, M. (2007). "Why so fed up and footloose in IT? Spelling out the associations between occupation and overall job satisfaction shown by WERS 2004." Industrial Relations Journal 38(4): 356-384.

Rosenberg, M. (1965). Society and adolescent self-image. Princeton, NJ, Princeton University Press.

Rothbard, N. P. and J. R. Edwards (2003). "Investment in work and family roles: a test of identity and utilitarian motives." Personnel Psychology 56(3): 699-730.

Rottinghaus, P. J., Larson, L.M. and Borgen, F.H. (2003). "The relation of self-efficacy and interests: a meta-analysis of 60 samples." Journal of Vocational Behavior 62: 221-236.

Rousseau, D. M. (1990). "New hire perceptions of their own and their employer's obligations: a study of psychological contracts." Journal of Organisational Behaviour 11: 389-400.

Rowlands, I., and Lee, C. (2006). "Choosing to have children or choosing to be childfree: Australian students attitudes towards the decisions of heterosexual and lesbian women." Australian Psychologist 41(1): 55-59.

Royse, P., Lee, J., Undrahbuyan, B., Hopson, M. and Consalvo, M. (2007). "Woman and games: technologies of the gendered self." New Media and Society 9: 555-576.

Royster, D. A. (2003). Race and the Invisible Hand: How White Networks Exclude Black Men from Blue-Collar Jobs. Berkeley, CA, University of California Press.

Rusticus, S. A., Hubley, A.M., and Zumbo, B.D. (2004). Cross-National Comparability of the Rosenberg Self-Esteem Scale. 112th Convention of the American Psychological Association. Honolulu, Hawaii.

Ryan, M. K., Haslam, A., and Kulich, C. (2010). "Politics and the glass cliff: evidence that women are preferentially selected to contest hard-to-win seats." Psychology of Women Quarterly 34: 56-64.

Sacharin, V., Lee, F., and Gonzalez, R. (2009). "Identities in harmony: gender-work identity integration moderates frame switching in cognitive processing." Psychology of Women Quarterly 33: 275-284.

Saks, A. M., and Ashforth, B.E. (1997). "A longitudinal investigation of the relationships between job information sources, applicant perceptions of fit, and work outcomes." Personnel Psychology 50(2): 395-426.

Salami, S. O. (2007). "Influence of culture, family and individual differences on choice of gender-dominated occupations among female students in tertiary institutions." Women in Management Review 22(8): 650-665.

Saleh, S. D., and Hosek, J. (1976). "Job involvement: concepts and measurements." Academy of Management Journal 19: 229-253.

Sauers, D. A., Kennedy, J.C., & O'Sullivan, D. (2002). "Managerial sex role stereotyping: a New Zealand perspective." Women in Management Review 7: 342-347.

Sayers, R. (2007). "The right staff from X to Y: generational change and professional development in future academic libraries." Library Management 28(8/9): 474-487.

Scandura, T. A., and Lankau, M. J. (1997). "Relationships of gender, family responsibility and flexible work hours to organisational commitment and job satisfaction." Journal of Organisational Behaviour 18(4): 377-391.

Schein, E. H. (1975). "How career anchors hold executives to their career paths." Personnel Psychology 52: 11-24.

Schein, E. H. (1978). Career Dynamics: Matching Individual and Organizational Needs. Reading, MA., Addison-Wesley.

Schein, E. H. (1987). Individuals and careers. Handbook of Organizational Behavior. J. Lorsch. Englewood Cliffs, NJ, Prentice-Hall: 155-71.

Schein, E. H. (1990). Career Anchors: Discovering Your Real Values. San Diego, CA, Pfeiffer & Company.

Schein, V. (1973). "The relationship between sex role stereotypes and requisite management characteristics." Journal of Applied Psychology 57(1): 95-100.

Schein, V. E., Muller, R., and Jacobson, C. (1989). "The relationship between sex role stereotypes and the requisite management characteristics among college students." Sex Roles 20(1/2): 103-110.

Schein, V. E., and Muller, R. (1992). " Sex role stereotyping and requisite management characteristics: A cross cultural look." Journal of Organizational Behaviour 13: 439-447.

Schein, V. E., Mueller, R. Lituchy, T. (1996). "Think manager-think male: a global phenomenon?" Journal of Organizational Behaviour 17: 33-41.

Schmader, T. (2002). "Gender identification moderates stereotype threat effects on women's math performance." Journal of Experimental Social Psychology 38: 194-201.

Schmader, T., Johns, M., and Barquissau, M. (2004). "The costs of accepting gender differences: the role of stereotype endorsement in women's experience in the math domain." Sex Roles 50(11/12): 835-850.

Schmidt, W. (1997). "World wide web survey research: benefits, potential problems and solutions." Behavior Research Methods, Instruments and Computers 29: 274-279.

Schmitt, N., Cortina, J.M., Ingerick, M.J., and Wiechmann, D. (2003). Personnel selection and employee performance. Handbook of Psychology. W. C. Borman, Ilgen, D., and Klimoski, R.J. New York, Wiley. 12: 77-106.

Schoon, I., Ross, A., and Martin, P. (2007). "Science related careers: aspirations and outcomes in two British cohort studies." Equal Opportunities Commission 26(2): 129-143.

Schott, G., and Horrell, K. (2000). "Girl gamers and their relationship with the gaming culture." Convergence: The International Journal of Research into New Media Technologies 6(4): 36-53.

Schultheiss, D. E. P. (2009). "To mother or matter: can women do both?" Journal of Career Development 36(1): 25-48.

Schumacker, R. E., and Lomax, R.G. (2004). A beginner's guide to structural equation modelling. London, Lawrence Erlbaum Associates.

Schunk, D. H. (1990). "Goal setting and self-efficacy during self-regulated learning." Educational Psychology 25: 71-86.

Schunk, D. H., and Zimmerman, B.J. (1994). Self-Regulation of Learning and Performance. Hillsdale, NJ, Erlbaum.

Schut, K. (2007). "Strategic simulations and our past: the bias of computer games in the presentation of history." Games and Culture 2(3): 213-235.

Schwartz, S. H., and Rubel, T. (2005). "Sex differences in value priorities: cross-cultural and multi method studies." Journal of Personality and Social Psychology 89(6): 1010-1028.

Schyns, B., and Von Collani, G. (2002). "A new occupational self-efficacy scale and its relations to personality constructs and organisational variables." European Journal of Work and Organizational Psychology 11: 219-41.

Szesny, S., Bosa, J., Neff, D., and Schyns, B. (2004). "Gender stereotypes and the attribution of leadership traits: a cross-cultural comparison." Sex Roles 51(11/12): 631-645.

Sealy, R., Vinnicombe, S., and Singh, V. (2008). The female FTSE report 2008. 10th anniversary year for the female FTSE: a decade of delay, Cranfield University School of Management.

Seery, M. D., Blascovich, J., Weisbuch, M., and Vick, S.B. (2004). "The relationship between self esteem level, self esteem stability, and cardiovascular reactions to performance feedback." Journal of Personality and Social Psychology 87: 133-45.

Sekaquaptewa, D., and Thompson, M. (2002). "The differential effects of solo status on members of high- and low-status groups." Personality & Social Psychology Bulletin 28: 694-707.

Sekaquaptewa, D., and Thompson, M. (2003). "Solo status, stereotype threat, and performance expectancies: their effects on women's performance." Journal of Experimental Social Psychology 39: 68-74.

Shakeshaft, C. (1993). Women in educational management in the United States. Women in education management. J. Ouston. Harlow, Longman.

Shapiro, M., Ingols, C., and Blake-Beard, S. (2008). "Confronting career double binds: implications for women, organization, and career practitioners." Journal of Career Development 34(3): 309-333.

Shelton, B. A. (1992). Women, men and time: gender differences in paid work, housework and leisure. New York, Greenwood.

Shields, M. A., and Ward, M. (2001). "Improving nurse retention in the National Health Service in England: the impact of job satisfaction on intentions to quit." Journal of Health Economics 20: 677-701.

Shih, M., Ambady, N., Richeson, J.A., Fujita, K., and Gray, H.M. (2002). "Stereotype performance boosts: the impact of self-relevance and the manner of stereotype activation." Journal of Personality and Social Psychology 83(3): 638-647.

Shih, M., Pittinsky, T.L., and Trahan, A. (2006). "Domain-specific effects of stereotypes on performance." Self and Identity 5: 1-14.

Simpson, B. and B. Carroll (2008). "Re-viewing 'role' in processes of identity construction." Organization 15(1): 29-50.

Simpson, C. K., and Boyle, D. (1975). "Esteem construct generality and academic performance." Educational and Psychological Measurement 35: 897-904.

Simpson, R. (1998). "Presenteeism, power and organisational change: long hours as a career barrier and the impact on the working lives of women managers." British Journal of Management Communication Quarterly 9(September): 37-50.

Simpson, R. (2004). "Masculinity at work: the experiences of men in female dominated occupations." Work, Employment and Society 18(2): 349-368.

Simpson, R. (2005). "Men in non-traditional occupations: Career entry, career orientation, and experience of role strain." Gender, Work, and Organization 12: 365-380.

Singh, K., and Allen, K.R. (2007). "Women in computer-related majors: A critical synthesis of research and theory from 1994 to 2005." Review of Educational Research 77(4): 500-533.

Singh, V., & Vinnicombe, S. (2005). *New Look Women Directors Add Value to FTSE 100 Boards: The Female FTSE Index*. Canfield University School of Management.

Skillset (2006). *Skillset: Workforce Survey 2006*. London, The Sector Skills Council for the Audio Visual Industries.

Skillset (2009). *2009 Employment Census: The results of the seventh Census of the Creative Media Industries December 2009*. The Sector Skills Council for Creative Media.

Stitka, L. J., and Bravo, J. (2005). An accessible identity approach to understanding: Fairness in Organizational settings, Information Age Publishing.

Smith, C. J., Noll, J.A., and Becker Bryant, J. (1999). "The effect of social context on gender self-concept " Sex Roles 40(5/6): 499-512.

Smith, M. (2009). "Gender, pay and work satisfaction at a UK University." Gender, Work and Organisation 16(5): 621-641.

Smola, K. W., and Sutton, C.D. (2002). "Generational differences: revisiting generational work values for the new millennium." Journal of Organizational Behavior 23: 363-382.

Somers, M. D. (1993). "A comparison of voluntarily childfree adults and parents." Journal of Marriage and the Family 55(3): 643-650.

Spector, P. E. (1985). "Measurement of human service staff satisfaction: development of the job satisfaction survey 1." American Journal of Community Psychology 13(6): 693 - 713.

Spence, J. T., Helmreich, R., and Stapp, J. (1975). "Ratings of self and peers on sex role attributes and their relationship to self-esteem and conceptions of masculinity and femininity " Journal of Personality and Social Psychology 32(29-39).

Spence, J. T., and Helmreich, R.L. (1981). "Androgyny versus gender schema: a comment on Bem's gender schema theory." Psychological Review 88: 365-368.

Spence, J. T. (1983). "Comment on Lubinski, Tellegen , and Butcher's "masculinity, femininity and androgyny viewed and assessed as distinct concepts"." Journal of Personality and Social Psychology 44: 440-446.

Spencer, S., Steele, C., and Quin, D. (1999). "Stereotype threat and women's math performance." Journal of Experimental Social Psychology 35: 4-28.

Spencer, S. J., Josephs, R.A., and Steele, C.M. (1993). Low self esteem: the uphill struggle for self integrity. Self-esteem: the puzzle of low self-regard. R. Baumeister. New York, Plenum Press: 21-36.

Srsic, C. S., and Walsh, W.B. (2001). "Person-environment congruence and career self-efficacy." Journal of Career Assessment 9(2): 203-213.

Steele, C. M., and Aronson, J. (1995). "Stereotype threat and the intellectual test of African Americans performance " Journal of Personality and Social Psychology 69: 797-811.

Steele, J., James, J.B., and Barnett, R.C. (2002). "Learning in a man's world: examining the perceptions of undergraduate women in male-dominated academic areas." Psychology of Women Quarterly 26: 46-50.

Steele, J. R., and Ambady, N. (2006). "Math is hard!" the effect of gender priming on women's attitudes." Journal of Experimental Social Psychology 42: 428-436.

Stets, J. E., and Burke, P.J. (2000). "Identity theory and social identity theory." Social Psychology Quarterly 63(3): 224-37.

Storms, M. D. (1979). "Sex role identity and its relationships to sex role attributes and sex role stereotypes." Journal of Personality and Social Psychology 37(10): 1779-1789.

Straehley, C. J., and Longo, P. (2006). "Family issues affecting women in medicine, particularly women surgeons." American Journal of Surgery 192: 695-698.

Stryker, S., and Burke, P.J. (1968). "Identity salience and role performance: the relevance of symbolic interaction theory for family research." Journal of marriage and the family 30: 558-564.

Stryker, S., and Serpe, R.T. (1994). "Identity salience and psychological centrality: equivalent, overlapping, or complementary concepts?" Social Psychology Quarterly 57(1): 16-35.

Stryker, S., and Burke, P.J. (2000). "The past, present and future of an identity theory." Social Psychology Quarterly 63(4): 284-297.

Suutari, V., and Taka, M. (2004). "Career anchors of managers with global careers." Journal of Management Development 23(9): 833-847.

Swanson, J. L., and Woitke, M.B. (1997). "Theory into practice in career assessment for women: assessment and interventions regarding perceived career barriers." Journal of Career Assessment 5: 443-462.

Symonds, R. (2000). Why IT Doesn't Appeal to Young Women. in Women, Work and Computerization: Charting a Course to the Future. Vancouver BC, Kluwer Academic Publishers.

Taifel, H., and Turner, J.C. (1986). The social identity theory of intergroup behavior. The psychology of intergroup relations. S. Worchel, and Austin, W.G. Chicago, Nelson-Hall: 7-24.

Tang, T. L., Singer, M. G., and Roberts, S. (2000). "Employees' perceived organizational instrumentality: an examination of the gender differences." Journal of Managerial Psychology 15(5): 378-406.

Tattersall, A., Keogh, C., and Richardson, H. (2007). "The gender pay gap in the ICT industry" University of Salford.

Taub, E. (2006). Nintendo at AAP event to count the grayer gamer. New York Times. New York.

Taylor, C. J. (2010). "Occupational sex composition and the gendered availability of workplace support." Gender and Society 24(2): 189-212.

Taylor, K. M., and Betz, N.E. (1983). "Applications of self-efficacy theory to the understanding and treatment of indecision." Journal of Vocational Behavior 22: 63-81.

Taylor, T. L. (2003). "Multiple pleasures: women and online gaming." Convergence 9(1): 21-46.

Teague, J. (2002). "Women in computing: what brings them to it, what keeps them in it?" SIGCSE Bulletin 34(2): 17-158.

Tett, R. P., and Burnett, D.D. (2003). "A personality trait based interactionist model of job performance." Journal of Applied Psychology 88: 500-517.

Tharenou, P. (1999). "Is there a link between family structures and women's and men's managerial career advancement?" Journal of Organizational Behaviour 20: 837-863.

Thewlis, M., Miller, L. and Neathey, F. (2004). Advancing women in the workplace: statistical analysis. Working Paper Series No. 12. EOC. Manchester, Equal Opportunities Commission.

Thomas, K. W., Jansen, E. and Tymon, W.G. Jr (1997). Navigating in the realm of theory: an empowering view of construct development. Research in Organizational Change and Development. W. A. A. Pasmore and R. W. Woodman. Greenwich, CT, JAI Press. 10: 1-30.

Thornton, M., and Bricheno, P. (2000). "Primary school teachers' careers in England and Wales: the relationship between gender, role, position and promotion aspirations." Pedagogy, Culture and Society 8(2): 187-206.

Tinklin, T., Croxford, L., Ducklin, A., and Frame, B. (2005). "Gender and attitudes to work and family roles: the views of young people at the millennium." Gender and Education 17(2): 129-142.

Tinsley, D. J., and Faunce, P. S. (1980). "Enabling, facilitating and precipitating factors associated with women's career orientation." Journal of Vocational Behaviour 17: 183-194.

Ton, M.-T. N., and Hansen, J-I.C. (2001). "Using a person-environment fit framework to predict satisfaction and motivation in work and marital roles." Journal of Career Assessment 9(4): 315-331.

Tracey, C. and H. Nicholl (2007). "The multifaceted influence of gender in career progress in nursing." Journal of Nursing Management 15(7): 677-682.

Trauth, E. M. (2002). "Odd girl out: an individual differences perspective on women in the IT profession." Information Technology and People 15(2): 98-118.

Trauth, E. M., Quesenberry, J.L., and Morgan, A.J. (2004). Understanding the under representation of women in IT: toward a theory of individual differences. Proceedings of the 2004 ACM SIGMIS Conference on Computer Personal Research. M. Tanniru, and Weisband, S. New York, ACM Press: 114-119.

Trautner, M. N. (2005). "Doing gender, doing class: the performance of sexuality in exotic dance clubs." Gender & Society 19: 771-788.

Trentham, S., and Larwood, L. (1998). "Gender discrimination in the workplace: an examination of rational bias theory." Sex Roles 38: 1-28.

Turban, D. B., and Dougherty, T.W. (1994). "Role of protégé personality in receipt of mentoring and career success." The Academy of Management Journal 37(3): 688-702.

Turkle, S. (1988). Computational reticence: why women fear the intimate machine. Technology and women's voices - keeping in touch C. Kramarae. London, Routledge and Kegan Paul: 41-61.

Turner, J. C., Hogg, M.A., Oakes, P.J., Reicher, P.J., and Wetherall, M.S. (1987). Rediscovering the social group: a self-categorization. Oxford, UK, Blackwell.

Twenge, J. M. (1997). "Changes in masculine and feminine traits over time: a meta-analysis." Sex Roles 36(5/6): 305-325.

Twenge, J. M., and Campbell, S.M. (2008). "Generational differences in psychological traits and their impact on the workplace." Journal of Managerial Psychology 23(8): 862-877.

Tzuriel, D. (1984). "Sex role typing and ego identity in Israeli, Oriental, and Western adolescents." Journal of Personality and Social Psychology 46: 440-457.

Ullman, J. B. (2001). Structural equation modelling. Using multivariate statistics. B. G. Tabachnick, and Fidell, L.S. Boston, Pearson International: 676-780.

Valentine, S., and Fleischman, G. (2003). "The impact of self-esteem, Machiavellianism, and social capital on attorneys' traditional gender outlook." Journal of Business Ethics 43: 325-335.

Valentine, S. (2006). "Hispanics' self-esteem, acculturation, and scepticism of women's work." Journal of Applied Social Psychology 36(1): 206-221.

Valenduc, G., et al (2004). Widening women's work in information and communication technology, European Commission. Available online: <http://www.ftu-namur.org/fichiers/D12-print.pdf> Accessed March 2008.

van den Brink, M., and Stobbe, L. (2009). "Doing gender in academic education: the paradox of visibility." Gender, Work and Organisation 16(4): 451-470.

Van Der Boom, M. (2003). "Women in international management." Women in Management Review 18(3): 132-146.

van Engen, M. L., van der Leeden R., and Willemsen, T.M. (2001). "Gender, context and leadership style: a field study" Journal of Occupational and Organizational Psychology 74: 581-598.

Van Vianen, A. E. M. (1999). "Managerial self-efficacy, outcome expectancies, and work-role salience as determinants of ambition for a managerial position" Journal of Applied Social Psychology 29(3): 639-65.

van Vuuren, M., de Jong, M.D.T., and Seydel, E.R. (2008). "Contributions of self and organisational efficacy expectations to commitment a fourfold typology." Employee Relations 30(2): 142-156.

- Vancouver, J. B., Thompson, C. M., and Williams, A. A. (2001). "The changing signs in the relationships between self-efficacy, personal goals and performance." Journal of Applied Psychology of Women Quarterly 86: 605-620.
- Vinnicombe, S., Singh, V., & Kumra, S. (2004). Making Good Connections: Best Practice for Women's Corporate Networks. Cranfield University School of Management.
- von Hellens, A. L., and Nielson, S.H. (2001). "Australian women in IT." Communications of the ACM 44(7): 46-52.
- von Hellens, L., Nielsen, S.H., and Beekhuyzen, J. (2004). "An exploration of dualisms in female perceptions of IT work." Journal of Information Technology Education 3: 103-115.
- Voydanoff, P. (2004). "The effects of work demands and resources on work-to-family conflict and facilitation." Journal of Marriage and the Family 66: 398-412.
- Voydanoff, P. (2005). "Work demands and work-to-family and family-to-work conflict: direct and indirect relationships." Journal of Family Issues 26: 707-726.
- Wagner, M., 10(3), (2000). "Childless by choice? Ambivalence and the female identity." Feminism & Psychology 10(3): 389-395.
- Wajcman, J. (1991). Feminism confronts technology. Cambridge, Polity Press.
- Wajcman, J. (1998). Managing like a man. Oxford, Blackwell.
- Wajcman, J. (2000). "Reflections on gender and technology studies: In what state is the art?" Social studies of science 30(3): 447-464.
- Wajcman, J., and Martin, B. (2002). "Narratives of identity in modern management: the corrosion of gender difference?" Sociology Compass 36(4): 985-1002.

Wajcman, J. (2004). TechnoFeminism. Cambridge, Polity.

Wajcman, J. (2007). "From women and technology to gendered technoscience." Information, Communication and Society 10(3): 287-298.

Wallace, J. E., and Young, M.C. (2006). "Can women in law have it all? a study of motherhood, career satisfaction and life balance." Research in the Sociology of Organizations 24: 293-319.

Wallace, J. E., and Young, M.C. (2008). "Parenthood and productivity: a study of demands, resources and family-friendly firms." Journal of Vocational Behavior 72: 110-122.

Wallop, H. (2009). Video games bigger than film. The Daily Telegraph. London. 31st March, 2009.

Wass, V., and McNabb, R. (2006). "Pay, promotion and parenthood amongst women solicitors." Work, Employment and Society 20(2): 289-308.

Webber, G., and Williams, C. (2008). "Mothers in "good" and "bad" part-time jobs: different problems, same results." Gender & Society 22(6): 752-777.

Weeden, K. A., and David B. Grusky. (2005). "The case for a new class map." American Journal of Sociology 111: 141-212.

Weichselbaumer, D., and Winter-Ebmer, R. (2005). "A meta-analysis of the international gender wage gap." Journal of Economic Surveys 19: 483-511.

Wharton, A. M., and Blair-Loy, M. (2006). "Long work hours and family life: a cross-national study of employee' concerns." Journal of Family Issues 27: 415-436.

White, J. B. (2008). "Fail or flourish? Cognitive appraisal moderates the effect of solo status on performance." Personality and Social Psychology Bulletin 34(9): 1171-1184.

Whitley, B. E. (1983). "Sex role orientation and self esteem: a critical meta-analytic review." Journal of Personality and Social Psychology 44(4): 765-778.

Whitley, B. E. (1988). "Masculinity, femininity, and self-esteem: a multitrait-multimethod analysis." Sex Roles 18(7/8): 419-431.

Whitley, B. E., and Gridley, B.E. (1993). "Sex role orientation, self-esteem and depression: a latent variables analysis." Personality and Social Psychology Bulletin 19(4): 363-369.

Wicker, F. W., Brown, G., Wiehe, J.A., Hagen, A.S., and Reed, J.L. (1993). "On reconsidering Maslow: an examination of the deprivation/domination proposition." Journal of Research Personal 27: 118-133.

Wickham, J., Collins, G., Greco, L, and Browne, J. (2008). "Individualization and equality: women's careers and organizational form." Organization 15(2): 211-231.

Wilcox, C., and Francis, L.L. (1997). "Beyond gender stereotyping: examining the validity of the Bem Sex-Role Inventory among 16 to 19 year old females in England." Personality and Individual Differences 23(1): 9-13.

Willemsen, T. M. (2002). "Gender typing of the successful manager - A stereotype reconsidered." Sex Roles 46: 385-391.

Williams, C. L. (1992). "The glass escalator: hidden advantages for men in non traditional occupations." Social Problems 39: 253-267.

Williams, M. J., Levy Paluck, E., and Spence-Rodgers, J. (2010). "The masculinity of money: automatic stereotypes predict gender differences in estimated salaries." Psychology of Women Quarterly 34: 7-20.

Williams, S., and Cooper, C.L. (1998). "Measuring occupational stress: development of the Pressure Management Indicator." Journal of Occupational Health Psychology 3(4): 306-321.

Wilson, F. (2003). "Can compute, won't compute: women's participation in the culture of computing." New Technology, Work and Employment 18(2): 127-142.

Wilson, F. M. (2002). "Management and the professions: how cracked is the glass ceiling?" Public Money and Management Journal 22: 15-20.

Wilson, V., Powney, J., Hall, S., and Davidson, J. (2006). "Who gets ahead?: the effect of age, disability, ethnicity and gender on teachers' careers and implications for school leaders." Educational Management Administration and Leadership 34(2): 239-255.

Wilson-Kovacs, A. M., Ryan, M., and Haslam, A. (2006). "The glass-cliff: women's career paths in the UK private IT sector." Equal Opportunities International 25(8): 674-687.

Women and Equality Unit (2005). Women and men in the workplace. Equal Opportunities Commission, Manchester.

Wood, J. G., and Newton, J. (2006a). "Childlessness and women managers: choice, context and discourses." Gender, Work and Organization 13(4): 338-358.

Wood, J. G., and Newton, J. (2006b). "'Facing the wall' - 'equal' opportunity for women in management?" Equal Opportunities International 25(1): 8-24.

Wood, J. V., Heimpel, S.A. and Michela, J.L. (2003). "Savouring versus dampening: self-esteem differences in regulating positive effect." Journal of Personality and Social Psychology 85: 566-80.

Yates, S., and Littleton, K. (2001). Understanding computer games culture: a situated approach. Virtual Gender: Technology, Consumption and Identity. E. Green, and Adam, A. London, Routledge: 103-123.

Yoder, J. D. (1994). "Looking beyond numbers: the effects of gender status, job prestige, and occupational gender-typing on tokenism processes." Social Psychology Quarterly 57: 150-159.

Yogev, S., and Vierra, A. (1983). "The state of motherhood among professional women." Sex Roles 9(3): 391-396.

Yong, S.-T., and Tiong, K-M. (2008) Video/computer games: differences in the gender preferences, participation and perception. Games Journal DOI: www.gamejournal.org Accessed January 2009.

Young, P. (1999). "Salary discrimination: a test of the paradoxical female hypothesis." Educational Administration Quarterly 35(3): 379-397.

Zhang, J., Norvilitis, J.M., and Jin, S. (2001). "Measuring gender orientation with the Bem Sex Role Inventory in Chinese culture." Sex Roles 44(3/4): 237-251.

Appendices

Appendix 1: Women in Computer Questionnaire

Personal and Professional Biographical Details

1. Gender Male Female
2. What is your age range? 18-25yrs 26-35yrs 36-45yrs 46-50yrs 51+
3. How would you describe your ethnic origin?
- | | | | |
|------------------------|-----|-------------------------------|-------------------------|
| White | | Asian or Asian British | Chinese/Other |
| British | [] | Indian | [] |
| Irish | [] | Pakistani | [] |
| Other White background | [] | Bangladeshi | [] |
| | | Other Asian background | [] |
| | | | Chinese |
| | | | Japanese |
| | | | Other ethnic background |
| | | | Prefer not to say |
-
- | | | | |
|---------------------------|-----|-------------------------------|-----|
| Mixed | | Black or Black British | |
| White and Black Caribbean | [] | Caribbean | [] |
| White and Black African | [] | African | [] |
| White and Asian | [] | Other Black background | [] |
| Other mixed background | [] | | |
4. Please state the country you work in _____
5. What is your Nationality? British Other EU Country Non-EU Country
6. Are you? Single Married Widowed Divorced or Separated Living with partner
7. How would you describe your sexuality? Heterosexual Homosexual/Lesbian Bisexual Prefer not to say
8. Do you have children? Yes No b. If Yes are you a lone parent? Yes No
9. Are you a carer for any other dependent? Yes No
10. Do you have any health problems or disabilities? Yes No *If yes please specify* _____
11. What is your professional identity?
- | | | | | | | | | | | | |
|----------|--------------------------|----------|--------------------------|-----------|--------------------------|----------|--------------------------|------------|--------------------------|----|--------------------------|
| Artist | <input type="checkbox"/> | Coder | <input type="checkbox"/> | Engineer | <input type="checkbox"/> | Lecturer | <input type="checkbox"/> | Researcher | <input type="checkbox"/> | QA | <input type="checkbox"/> |
| Producer | <input type="checkbox"/> | Designer | <input type="checkbox"/> | Executive | <input type="checkbox"/> | Audio | <input type="checkbox"/> | Writer | <input type="checkbox"/> | | |
- Other *please specify* _____
12. What grade or level are you, are you: Junior Middle Senior Lead Manager
13. What is your job title? _____
14. Approximately how many hours do you work in an average week?
- Less than 39 bet 39-45 bet 46-55 bet 56-65 66+
15. Do you work? Full time Part-time Other
16. Up to what level of education do you possess (*select all that apply*)?
- | | | | | | | | | | | | |
|---------------|--------------------------|---------|--------------------------|---------------|--------------------------|---------------------|--------------------------|--------------|--------------------------|--------------|--------------------------|
| GCSE Level | <input type="checkbox"/> | A*Level | <input type="checkbox"/> | Undergraduate | <input type="checkbox"/> | Postgraduate | <input type="checkbox"/> | Doctorate | <input type="checkbox"/> | Professional | <input type="checkbox"/> |
| Qualification | | Degree | | Degree | | Degree e.g. MA, MBA | | e.g. PhD, MD | | | |
17. How long have you worked in the games industry?
- Less than 1 yr 1-3yrs 4-7yrs 8-11yrs 12-15yrs 16-19yrs 20-23yrs 24-27yrs 28-31yrs 32+yrs
18. Do you plan being in the games industry in 5 years time? Yes No Do not Know
- 18b. IF NO: why is that _____
19. How many times have you been promoted in the past five years? None 1 2 3 4 5+
20. Would you be prepared to relocate to another part of the country for a promotion? Yes No Do not know
21. Have you worked outside this industry? Yes No 21b. IF YES: what industry did you work in prior to this one?
22. Do you play computer games in your leisure time? Yes No If so what type(s) _____

23. Your feelings about yourself : To what extent would you agree/disagree with the following statements about how you feel about yourself at work ranging from 1 strongly disagree to 4 strongly agree?

	1	2	3	4
1.On the whole I am satisfied with myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.At times I think I am no good at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.I feel I have a number of good qualities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.I am able to do things as well as most people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.I feel I do not have much to be proud of	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.I certainly feel useless at times	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.I feel that I am a person of worth, at least on an equal plane with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.I wish I could have more respect for myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.All in all, I am inclined to think I am a failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.I take a positive attitude towards myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

24. Work life balance issues: To what extent would you agree/disagree with the following statements from 1 very strongly disagree to 6 very strongly agree?

	1	2	3	4	5	6
1.I am happy with my work life balance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.The number of hours I work does not affect my personal health	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.The number of hours I work affects my personal relationships	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.Work life balance is bad for productivity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.Awareness of work life balance policies needs to be improved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.Work life balance is part of my workplace culture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.My colleagues approve when I need to leave work because of outside commitments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.There is a long hours culture within my organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

25. Belief in your ability: To what extent are the following statements true or untrue about you at work, ranging from 1 not at all true to 6 completely true.

	1	2	3	4	5	6
1.I can remain calm when facing difficulties in my job because I can rely on my abilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.When I am confronted with a problem in my job, I can usually find several solutions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.Whatever comes my way in my job, I can usually handle it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.My past experiences in my job have prepared me well for my occupational future	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.I meet the goals I set for myself in my job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.I feel prepared for most of the demands in my job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

26. Job and Organisational fit: Please indicate the level of agreement with each of the following statements ranging from 1 very strongly disagree and 7 very strongly agree

	1	2	3	4	5	6	7
1.My abilities fit the demands of this job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.I have the right skills and abilities for doing this job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.There is a good match between the requirements of this job and my skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.My personality is a good match for this job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.I am the right type of person for this type of work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.My values match or fit the values of this organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.I am able to maintain my values at this company	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.My values prevent me from fitting in at this company because they are different from the company's values	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

27. Motivation: Please indicate the extent to which each item describes you at work from 1 never true to 4 always true

	1	2	3	4
1.I am not that concerned about what other people think of my work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.I prefer having someone set clear goals for me in my work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.The more difficult the problem, the more I enjoy trying to solve it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.I am keenly aware of the income goals I have for myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.I want my work to provide me with opportunities for increasing my knowledge and skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.To me, success means doing better than other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.I prefer to figure things out for myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.No matter what the outcome of a project, I am satisfied if I feel I gained a new experience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.I enjoy relatively simple, straightforward tasks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.I am keenly aware of the goals I have for myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.Curiosity is the driving force behind much of what I do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.I am less concerned with what work I do than what I get from it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.I enjoy tackling problems that are completely new to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.I prefer work I know I can do well over work that stretches my abilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.I am concerned about how other people are going to react to my ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16.I seldom think about salary or promotions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.I am more comfortable when I set my own goals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18.I believe that there is no point in doing a good job if nobody else knows about it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19.I am strongly motivated by the money I can earn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20.It is important for me to be able to do what I most enjoy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21.I prefer working on projects with clearly specified procedures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22.As long as I can do what I enjoy, I'm not concerned about exactly what I am paid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23.I enjoy doing work that is so absorbing that I forget about everything else	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24.I am strongly motivated by the recognitions I can earn from other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25.I have to feel that I am earning something for what I do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26.I enjoy trying to solve complex problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27.It is important for me to have an outlet for self-expression	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28.I want to find out how good I really can be at my work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29.I want other people to find out how good I really can be at my work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30.What matters most to me is enjoying what I do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

28. Career progression and promotion: To what extent would you agree/disagree with the following statements ranging from 1 very strongly disagree to 6 very strongly agree?

	1	2	3	4	5	6
1.Promotion is important to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.I intend to climb the career ladder and I am prepared to make personal sacrifices in order to do so	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.I am progressing in my career	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.There are not enough opportunities for me to progress in my career	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.To be recognised in my field is important to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

29. Satisfaction at work: Please indicate how satisfied you are with your job from 1 very dissatisfied to 6 very satisfied?

	1	2	3	4	5	6
1.Communication and the way information flows around your organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.The actual job itself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.The degree to which you feel 'motivated' by your job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.The style of supervision that your superiors use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.The way that changes and innovations are implemented	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.The kind of work or tasks you are required to perform	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.The degree to which you feel that you can personally develop or grow in your job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.The way in which conflicts are resolved in your organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.The degree to which your job taps into the range of skills which you feel you have	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.The psychological 'feel' or climate that dominates your organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.The design or shape of your organisation's structure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.The degree to which you feel extended/stretched in your job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

30. Your characteristics: Please tick the following according to how well each of the following characteristics describes you at work ranging from 1 never true to 7 always true.

	1	2	3	4	5	6	7
1.Independent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.Affectionate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.Sympathetic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.Defends own beliefs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.Assertive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.Sensitive to the needs of others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.Strong personality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.Understanding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.Forceful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.Compassionate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.Has leadership abilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.Eager to soothe hurt feelings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.Willing to take risks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.Warm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.Dominant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16.Tender	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.Aggressive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18.Willing to take a stand	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19.Gentle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

31. Identification: Please indicate how much you agree/disagree with the following statements are about you at work, ranging from 1 strongly disagree to 5 strongly agree.

	1	2	3	4	5
1.At work my gender is important to my self-image	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.At work my gender is unimportant to my sense of what kind of person I am	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.At work my gender is an important reflection of who I am	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.At work my gender has very little to do with how I feel about myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

32. Barriers to career progression: To what extent would you agree/disagree with the following statements from 1 very strongly disagree to 6 very strongly agree?

	1	2	3	4	5	6
1.I think the glass ceiling exists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.Equal Opportunities legislation means there are no barriers to women in employment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.Some careers are more female friendly than others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.There are no covert barriers to women's achievement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.Women are well represented in my profession	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.Women are well represented in my organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Thank you for taking the time to complete this questionnaire

If you have any questions or want to know more about the study please email me at julie.prcscott@liverpool.ac.uk

Appendix 2: Promotional letter



Department of Clinical Psychology
The Whelan Building
The University of Liverpool
Liverpool
L69 3GB

date

Dear

I am a Phd student at the University of Liverpool, investigating the *experiences and aspirations of women working within the gaming industry*. My supervisor is Dr Jan Bogg who has ongoing extensive research on women's careers.

The research focus will be on understanding the experiences of women in non-traditional working environments, to gain further knowledge of their motivations, potential barriers and aspirations within the industry.

The research hopes to better understand women working in the games industry. *The studies aims and objectives will be of benefit to the industry and the people who work in it.*

I hope that you will be able to provide vital assistance to the study by publicising details of the study (see below) and possibly a link to the online questionnaire, www.survey.bris.ac.uk/breakingbarriers/games via your website, partnerships and internal communications.

If you would like any further information, please get in touch.

Yours Faithfully
Julie Prescott

Julie.prescott@liverpool.ac.uk
Department of Clinical Psychology
The Whelan Building
The University of Liverpool
Liverpool
L69 3GB

Please could you publicise the following information:

Are you a woman working in the computer games industry?

If so, a ground breaking study is being undertaken by PhD student, Julie Prescott from the University of Liverpool which you could play a vital part in. The questionnaire will take approximately 15 minutes to complete and consists of mostly check boxes with anonymity and confidentiality maintained at all times. The research also hopes to gain a fuller understanding of the types of women that currently work within the industry in the hope of helping the industry gain further knowledge of how it may attract, retain more women and become more visible as a career option for women in wider society. Research on women in the games industry represents a new and varied area of research for investigating women's career development in new industries and male dominated organisations.

Please help my research by completing my online questionnaire www.survey.bris.ac.uk/breakingbarriers/games. Thank you.

Appendix 3: Additional SEM tables

The table below shows the un-standardized coefficients (estimate), its standard error (S.E.), the critical ration (C.R.) and the probability value associated with the null hypothesis that the test is zero (P) for the modernized model (model 2).

Table 3. 84 Maximum Likelihood Estimate: Regression Weights

		Estimate	S.E.	C.R.	P
Fit	<--- Self Efficacy	4.406	.278	15.852	***
Satisfaction	<--- Barriers	.713	.198	3.595	***
Satisfaction	<--- WLB	.188	.073	2.587	.010
Satisfaction	<--- Fit	.179	.021	8.505	***
Aspirations	<--- Fit	.078	.017	4.491	***
Aspirations	<--- Satisfaction	-.119	.053	-2.255	.024
SelfE1	<--- Self Efficacy	1.000			
SelfE2	<--- Self Efficacy	.886	.054	16.349	***
SelfE3	<--- Self Efficacy	.934	.050	18.540	***
SelfE4	<--- Self Efficacy	.889	.066	13.559	***
SelfE5	<--- Self Efficacy	.930	.059	15.656	***
SelfE6	<--- Self Efficacy	1.078	.061	17.756	***
WL1	<--- WLB	1.000			
WL2	<--- WLB	1.122	.083	13.465	***
BARRIERS1_REV	<--- Barriers	1.000			
Barriers5	<--- Barriers	2.502	.432	5.787	***
JOBFIT	<--- Fit	1.000			
ORGFIT	<--- Fit	.460	.045	10.257	***
CP1	<--- Aspirations	1.000			
CP2	<--- Aspirations	1.063	.118	9.040	***
JOBSAT	<--- Satisfaction	3.483	.248	14.035	***
ORGSAT	<--- Satisfaction	3.242	.221	14.694	***
CP5	<--- Aspirations	.487	.063	7.779	***
Barriers6	<--- Barriers	2.468	.419	5.884	***
WL7	<--- WLB	.557	.065	8.521	***
WLB3_REV	<--- WLB	.796	.069	11.527	***
Barriers2	<--- Barriers	1.014	.243	4.176	***

All but two of the parameters had a variance significant at the 0.001 level of significance, res1 and e16 were still significant at the 0.05 level of significance, and therefore remain in the model.

Table 3. 85 Variances

	Estimate	S.E.	C.R.	P
Self Efficacy	.618	.066	9.303	***
res1	.174	.055	3.167	.002
res3	.778	.089	8.750	***
res2	4.676	.955	4.897	***
res4	1.000			
res5	.739	.106	6.972	***

	Estimate	S.E.	C.R.	P
e1	.436	.034	12.838	***
e2	.374	.029	13.021	***
e3	.228	.020	11.382	***
e4	.716	.051	13.959	***
e5	.487	.037	13.325	***
e6	.384	.032	12.138	***
e9	.565	.070	8.019	***
e10	.431	.055	7.791	***
e11	10.058	.719	13.998	***
e12	5.775	.953	6.059	***
e13	.711	.134	5.324	***
e17	15.282	1.647	9.280	***
e16	4.842	1.526	3.172	.002
e20	.766	.105	7.271	***
e21	.441	.087	5.096	***
e23	1.356	.095	14.320	***
E33	.719	.052	13.713	***
E34	.913	.136	6.703	***
E36	.981	.069	14.126	***
E41	.861	.067	12.929	***
e50	1.980	.136	14.520	***

Women in developmental roles

The table below shows the un-standardized coefficients (estimate), its standard error (S.E.), the critical ration (C.R.) and the probability value associated with the null hypothesis that the test is zero (P) for the modernized model on the data set of women working in a developmental role only.

Table 3. 86 Maximum Likelihood Estimate: Regression Weights

		Estimate	S.E.	C.R.	P
Fit	<--- Self Efficacy	4.290	.356	12.042	***
Satisfaction	<--- Barriers	.803	.228	3.516	***
Satisfaction	<--- WLB	.129	.081	1.597	.110
Satisfaction	<--- Fit	.191	.027	7.150	***
Aspirations	<--- Fit	.080	.021	3.867	***
Aspirations	<--- Satisfaction	-.086	.060	-1.448	.148
SelfE1	<--- Self Efficacy	1.000			
SelfE2	<--- Self Efficacy	.846	.062	13.608	***
SelfE3	<--- Self Efficacy	.941	.060	15.657	***
SelfE4	<--- Self Efficacy	.897	.082	10.963	***
SelfE5	<--- Self Efficacy	.922	.071	13.047	***
SelfE6	<--- Self Efficacy	1.048	.071	14.723	***
WL1	<--- WLB	1.000			
WL2	<--- WLB	.942	.091	10.298	***
BARRIERS1_REV	<--- Barriers	1.000			
Barriers5	<--- Barriers	2.415	.462	5.227	***
JOBFIT	<--- Fit	1.000			
ORGFIT	<--- Fit	.527	.056	9.418	***
CP1	<--- Aspirations	1.000			

		Estimate	S.E.	C.R.	P
CP2	<--- Aspirations	1.169	.160	7.297	***
JOBSAT	<--- Satisfaction	3.518	.296	11.898	***
ORGSAT	<--- Satisfaction	3.151	.251	12.562	***
CP5	<--- Aspirations	.519	.082	6.355	***
Barriers6	<--- Barriers	2.318	.429	5.405	***
WL7	<--- WLB	.555	.073	7.604	***
WLB3_REV	<--- WLB	.654	.078	8.410	***
Barriers2	<--- Barriers	.933	.255	3.657	***

The table below shows the standardized estimates, this allows the evaluation of the relative contributions of each predictor variable to each outcome variable for working in developmental roles.

Table 3. 87 Standardized Regression Weights

		Estimate
Fit	<--- Self Efficacy	.794
Satisfaction	<--- Barriers	.270
Satisfaction	<--- WLB	.090
Satisfaction	<--- Fit	.601
Aspirations	<--- Fit	.396
Aspirations	<--- Satisfaction	-.136
SelfE1	<--- Self Efficacy	.769
SelfE2	<--- Self Efficacy	.743
SelfE3	<--- Self Efficacy	.840
SelfE4	<--- Self Efficacy	.614
SelfE5	<--- Self Efficacy	.717
SelfE6	<--- Self Efficacy	.796
WL1	<--- WLB	.867
WL2	<--- WLB	.717
BARRIERS1_REV	<--- Barriers	.348
Barriers5	<--- Barriers	.837
JOBFIT	<--- Fit	.837
ORGFIT	<--- Fit	.572
CP1	<--- Aspirations	.761
CP2	<--- Aspirations	.744
JOBSAT	<--- Satisfaction	.900
ORGSAT	<--- Satisfaction	.748
CP5	<--- Aspirations	.450
Barriers6	<--- Barriers	.735
WL7	<--- WLB	.479
WLB3_REV	<--- WLB	.534
Barriers2	<--- Barriers	.284

All but two of the parameters had a variance significant at the 0.001 level of significance, res1 and e16 were still significant at the 0.05 level of significance, and therefore remain in the model.

Table 3. 88 Variances

	Estimate	S.E.	C.R.	P
Self Efficacy	.610	.077	7.869	***
res1	.203	.072	2.837	.005
res3	.876	.113	7.762	***
res2	6.569	1.318	4.982	***
res4	1.000			
res5	.641	.116	5.499	***
e1	.421	.040	10.658	***
e2	.354	.032	10.950	***
e3	.224	.024	9.339	***
e4	.812	.069	11.815	***
e5	.491	.044	11.198	***
e6	.387	.038	10.264	***
e9	.737	.086	8.589	***
e10	.288	.073	3.964	***
e11	10.178	.904	11.257	***
e12	7.582	1.305	5.809	***
e13	.506	.144	3.520	***
e17	14.020	1.802	7.782	***
e16	5.189	1.816	2.858	.004
e20	.792	.139	5.713	***
e21	.524	.100	5.265	***
e23	1.478	.122	12.148	***
E33	.766	.067	11.507	***
E34	.932	.148	6.302	***
E36	.908	.077	11.759	***
E41	.938	.082	11.415	***
e50	2.020	.164	12.329	***

Non developmental women

The table below shows the un-standardized coefficients (estimate), its standard error (S.E.), the critical ration (C.R.) and the probability value associated with the null hypothesis that the test is zero (P) for the modernized model on the data set of women working in non developmental roles only.

Table 3. 89 Maximum Likelihood Estimate: Regression Weights

		Estimate	S.E.	C.R.	P
Fit	<--- Self Efficacy	4.149	.467	8.876	***
Satisfaction	<--- Barriers	.629	.252	2.495	.013
Satisfaction	<--- WLB	.461	.155	2.981	.003
Satisfaction	<--- Fit	.146	.037	3.918	***
Aspirations	<--- Fit	.066	.030	2.213	.027
Aspirations	<--- Satisfaction	-.226	.092	-2.447	.014
SelfE1	<--- Self Efficacy	1.000			
SelfE2	<--- Self Efficacy	.962	.102	9.440	***
SelfE3	<--- Self Efficacy	.915	.089	10.336	***
SelfE4	<--- Self Efficacy	.885	.104	8.469	***
SelfE5	<--- Self Efficacy	.927	.106	8.784	***

		Estimate	S.E.	C.R.	P
SelfE6	<--- Self Efficacy	1.119	.110	10.170	***
WL1	<--- WLB	1.000			
WL2	<--- WLB	1.607	.199	8.071	***
BARRIERS1_REV	<--- Barriers	1.000			
Barriers5	<--- Barriers	.941	.270	3.487	***
JOBFIT	<--- Fit	1.000			
ORGFIT	<--- Fit	.351	.079	4.419	***
CP1	<--- Aspirations	1.000			
CP2	<--- Aspirations	.987	.169	5.858	***
JOBSAT	<--- Satisfaction	3.027	.393	7.695	***
ORGSAT	<--- Satisfaction	3.592	.462	7.779	***
CP5	<--- Aspirations	.480	.096	4.980	***
Barriers6	<--- Barriers	.820	.257	3.196	.001
WL7	<--- WLB	.551	.131	4.210	***
WLB3_REV	<--- WLB	1.063	.141	7.537	***
Barriers2	<--- Barriers	1.405	.358	3.921	***

The table below shows the standardized estimates, this allows the evaluation of the relative contributions of each predictor variable to each outcome variable for working in non- developmental roles.

Table 3. 90 Standardized Regression Weights

		Estimate
Fit	<--- Self Efficacy	.862
Satisfaction	<--- Barriers	.321
Satisfaction	<--- WLB	.281
Satisfaction	<--- Fit	.448
Aspirations	<--- Fit	.276
Aspirations	<--- Satisfaction	-.307
SelfE1	<--- Self Efficacy	.770
SelfE2	<--- Self Efficacy	.781
SelfE3	<--- Self Efficacy	.842
SelfE4	<--- Self Efficacy	.711
SelfE5	<--- Self Efficacy	.734
SelfE6	<--- Self Efficacy	.831
WL1	<--- WLB	.682
WL2	<--- WLB	.982
BARRIERS1_REV	<--- Barriers	.614
Barriers5	<--- Barriers	.448
JOBFIT	<--- Fit	.859
ORGFIT	<--- Fit	.415
CP1	<--- Aspirations	.837
CP2	<--- Aspirations	.759
JOBSAT	<--- Satisfaction	.846
ORGSAT	<--- Satisfaction	.759
CP5	<--- Aspirations	.512
Barriers6	<--- Barriers	.396
WL7	<--- WLB	.375
WLB3_REV	<--- WLB	.688
Barriers2	<--- Barriers	.642

Six parameters had a variance significant at the 0.001 level of significance, but they were all still significant at the 0.05 level of significance, and therefore remain in the model.

Table 3. 91 Variances

	Estimate	S.E.	C.R.	P
Self Efficacy	.656	.128	5.125	***
res1	.423	.148	2.853	.004
res3	.603	.143	4.209	***
res2	3.914	1.918	2.040	.041
res4	1.000			
res5	.796	.185	4.291	***
e1	.452	.064	7.084	***
e2	.390	.056	7.004	***
e3	.225	.035	6.342	***
e4	.501	.068	7.402	***
e5	.483	.066	7.295	***
e6	.368	.057	6.500	***
e9	.057	.127	.452	.652
e10	.693	.099	7.027	***
e11	8.990	1.148	7.831	***
e12	5.382	1.943	2.770	.006
e13	1.489	.212	7.009	***
e17	15.367	3.422	4.490	***
e16	5.874	2.147	2.736	.006
e20	.631	.151	4.184	***
e21	.377	.140	2.687	.007
e23	.699	.133	5.245	***
E33	.572	.077	7.389	***
E34	1.533	.209	7.318	***
E36	1.117	.138	8.073	***
E41	.757	.109	6.968	***
e50	1.193	.247	4.834	***