

## **The Workplace Implications of Ageism for Women in the Australian ICT Sector**

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### **Abstract:**

*The paper examines gender and ageism in the Australian Information Communications Technology industry. The data was collected through an online nation-wide online survey of women who self-identified as working in the ICT sector. An analysis of the demographic characteristics and career experiences of the 544 survey respondents, determined that age impacted on the career experiences of women in the ICT sector. Statistically significant results indicated that age influenced employment status, career advancement and income level*

**Keywords:** ageism, gender, women, Information Communication Technology, Australia, Social Identity Theory

### **1.0 Introduction**

According to the 2013 Australian Computer Society (ACS) Statistical Compendium, as at February 2013 there were an estimated 597,700 Information Communication Technology (ICT) workers employed in Australia (ACS, 2013). Demographic data indicates that the ICT work force is predominately young and male. Research also indicates that the ratio of female to male employees in the ICT sector is one in four (ACS, 2013; AWP, 2013). In 2013 the median age of the work force was 38 years. Approximately 67.8 per cent of the ICT workforce was aged 25 to 44 years compared to 45.5 per cent of the workforce as a whole (AWP, 2013). Projections of Australia's demographic future indicate that the population is increasing rapidly and inexorably ageing (Productivity Commission, 2013). A key issue associated with the demographic shift to an older population is the declining labour force participation rate. According to the Department of Finance and Deregulation (2010:ix), "As the proportion of the population of traditional working age falls, the rate of labour force participation across the whole population is also projected to fall". Although the retention of mature aged workers is an issue on the national agenda, age discrimination is a key contributing factors in the under-utilisation of older Australian workers (Department of Finance and Deregulation, 2010; Productivity Commission, 2013).

A review of the available literature indicates that age discrimination in the ICT sector is widely acknowledged but relatively unexplored (ACS, 2010; APESMA, 2010; AWP, 2013; Wood, Wilkinson, & Harcourt, 2008). Whilst research on the experiences of women in the ICT sector has examined career anchors; career life cycle; and the gender bias in the sector, the issue of an ageing female ICT workforce has not been researched (Mari, 2008; Quesenberry & Trauth, 2007; Timms, Lankshear, Anderson, & Courtney, 2008; Von Hellens, Nielsen, & Beekhuizen, 2003; Warne, Bandias, & Fuller, 2011). Given that the ICT workforce is characterised by a relatively youthful male cohort, an examination of the employment experiences of female ICT workers is warranted. The lack of data concerning the impact of 'age' on women employed in the Australian ICT sector prompted the Women's Board of the Australian Computer Society (ACS W) to undertake a survey of female ICT workers. The survey was conducted in November 2012. The Australia-wide online survey sought to obtain both quantitative and qualitative data concerning the characteristics and career experiences of women engaged in the ICT sector.

Respondents were also asked to identify factors that they felt had impacted their career path, the employment challenges and opportunities they had experienced. This paper commences by reviewing available literature on the topic in the context of 'social identity theory'. The methodology used in the study is then explained. This is followed by an analysis of the survey responses according to employment status, career advancement and income level in the workplace. The paper then discusses the survey results. The paper concludes with an overview of the implications and suggestions for further research.

## **2.0 Literature Review**

It is acknowledged that Australia has an ageing population. The deleterious impact of the ageing and shrinking workforce on the Australian economy has also been widely reported (APESMA, 2010; Commonwealth of Australia, 2015; Department of Finance and Deregulation, 2010; Productivity Commission, 2005, 2013). According to the 2010 and 2015 Intergenerational Report, Australia's mature-age worker participation rate is below that of comparable countries such as Canada, United Kingdom, New Zealand and the United States (Commonwealth of Australia, 2015; Department of Finance and Deregulation, 2010). Whilst retaining mature aged workers has both an economic and social imperative, age discrimination is one of the key contributing factors in the under-utilisation of older Australian workers (ACS, 2010; AHRC, 2010; APESMA, 2010; Department of Finance and Deregulation, 2010).

Research indicates that age discrimination is particularly evident in the ICT sector (ACS, 2010; APESMA, 2010; AWP, 2013; Wood et al., 2008). According to Australian Workforce and Productivity Agency (AWPA, 2013), the participation rate of mature-aged workers in the ICT sector is lower than the national average for all occupations. As the ACS (2010: 5) acknowledged "...anecdotally, age discrimination in the ICT sector has been known for some time and [is] widespread...". The unemployment amongst more experienced workers has occurred even in the context of economic growth and an increasing shortage of skilled ICT professionals (ACS, 2010; AWP, 2013). The 'prime working age' in the ICT sector is reported to be as narrow as 25 to 35 years, compared to 25 to 54 years for all occupations (ACS, 2010; AWP, 2013). Consequently, the concept of an "older" worker in the ICT industry is significantly different to the general view of what constitutes a "mature" employee. The vast majority of unemployed or underemployed ICT professionals are over the age of 45 and are perceived to be past their working prime.

There is a substantial body of research that indicates a worrying relationship between gender and age discrimination (Duncan & Loretto, 2004; Hahn & Wilkins, 2013a, 2013b; Kurland, 2001; Santora & Seaton, 2008). According to Duncan (2004) and Jyrkinen (2014) women are more likely than men to experience ageist attitudes particularly in regard to appearance and sexuality. Age and gender discrimination can be both overt and covert and have considerable impact on women in the workplace (Jyrkinen, 2014; Pillay, Kelly, & Tones, 2006). Santora and Seaton (2008) suggest that both age and gender stereotypes influenced employer perceptions of the work competencies of older employees. Furthermore, Messe (2012) and Jyrkinen (2014) argue that the consequences of gender and age related discrimination contributes to women becoming disengaged from work, undertaking a career change or taking early retirement. A review of the literature indicates there is little research on the experiences of mature female workers in the Australian ICT sector. Although the gender imbalance in the ICT sector has been well documented, (Timms et al., 2008; Trauth, Nielsen, & Von Hellens, 2003; Trauth, Quesenberry, & Morgan, 2004; Von Hellens et al., 2003); the career aspirations of women in the sector investigated (Quesenberry, 2006; Valenduc & Vendramin, 2005; Warne et al., 2011); and the perceived discrimination of women in the sector extensively researched (Demaiter & Adams, 2009; Mari, 2008; Timms et al., 2008); there is little empirical research on the impact of age on the employment experiences of female workers in the ICT sector.

Social identity theory suggests that people classify themselves and others in categories based on attributes, such as gender, race, or ethnicity (Brunetto & Farr-Wharton, 2002; Haslam, 2002). In an organizational context, employees identify more with other employees who are similar to their own category (in-group) than with dissimilar out-group members. Social identity theory argues that social (including organizational) structures and individual identity is established through the meanings people (employees) attach to their memberships of specific groups defined by race, ethnicity, or gender (Brunetto & Farr-Wharton, 2002; Haslam, 2002). These meanings consequently shape social and organizational interactions within members of various 'self-identified' groups. Social identity of distinct groups therefore provides avenues of shared experience, interaction and mutual support for in-group members including organizational rewards.

Members of a particular group may inadvertently or deliberately discriminate against other group members. This can manifest in various formal and informal outcomes including organizational rewards, career advancement and discretionary perquisites. Employee diversity in workplace is widely acknowledged as a driver of organizational success. However, the interaction between the in-group and out-group members can have a significant negative impact on the survival of some groups thereby impeding organizational diversity. According to Ely and Thomas (2001) the disproportionate representation of any group over others may have a negative impact on the social & organizational structure and interactions in the workplace. The underlying tenets of social identity theory therefore provide an appropriate and relevant perspective to study the experiences of female ICT employees in Australia.

### **3.0 Hypothesis Development**

The review of the literature has identified a number of environmental and organisational factors that may contribute to age discrimination of women in the ICT sector. Additionally, the literature review suggested that age discrimination may be both overt and covert and imbedded in existing organisational practices. Research indicates that gender discrimination is related to age; the role of women in organisations; skills attainment; income and career opportunities. This framework forms the basis of the development of the hypotheses of the study.

#### **3.1 Promotion Opportunities**

According to Jyrkinen (2014) women experience age discrimination in multiple stages of their career. Hahn and Wilkinsons (2013b) suggest that gender and age is a common factor predicting perceived discrimination in both job applications and throughout the course of employment. Not only does ageism and gender bias have an impact on the potential career path of women and their subsequent job role, but it also has a large negative effect on subjective outcomes such as job satisfaction and career engagement (Hahn & Wilkins, 2013b). The reported negative consequences of gendered ageism include reduced working hours (Santora & Seaton, 2008); limited career advancement opportunities (Messe, 2012) and a lack of challenging work (Warne et al., 2011). A study by Warne et al (2011), of the employment experiences of women in the Australian ICT sector, suggests that some older female workers felt frustrated and undervalued by the lack of recognition of their experience, qualifications and skills. Based on these findings it is hypothesised that:

Hypothesis 1: Promotion opportunities for women in the ICT sector is negatively related to age

#### **3.2 Employment Status**

Towards the latter part of a worker's career, labour market movement is common and complex (Zissimopoulos & Karoly, 2007, 2009). According to Zissimopoulos and Karoly (2009) the labour force dynamics of older workers includes movement between jobs, classes of work and periods of impermanent retirement. For many older workers the transition to retirement may also involve self-employment. It is well established that older workers constitute a significant share of the self-employed (GiSeung, 2007; Rogoff, 2007; Zissimopoulos & Karoly, 2007, 2009). According to Zissimopoulos and Karoly (2007) self-employment rates are low among the youngest workers, increase steadily until traditional retirement age and then begin to rise more sharply around retirement. In the Australian context approximately 53 percent of the self-employed workforces are aged 45 years and over (ABS, 2014). The ABS (2014) also reported that 20 per cent of all female independent contractors worked in the professional, scientific and technical services industry. Based on these findings it is hypothesised that:

Hypothesis 2: The incidence of self-employment amongst women in the ICT sector is positively related to age.

#### **3.3 Income and Age**

The relationship between age and income level has been well documented and well established (Hofflander, 1968; Jenkins, 2010; Miller, 1956; Von Weizsäcker, 1988). However, a number of other significant variables such as industry sector, gender, socio economic status, location and work experience have a moderating effect on income (Hofflander, 1968). Miller (1956:84) initially identified age as a significant factor in shaping the "...lifetime income curve..." of workers. He posited that income climbs throughout an individual's working life, levelling off and descending with advancing age. More recent research by Jenkins (2010) also indicates that wages increase with age from the beginning of the working life, but at a decreasing rate. According to Jenkins the age at which income starts to decline is different for men and women (2010). Notwithstanding the gender pay gap, women are considerably younger than men when they attain their peak income. Based on these arguments it is hypothesised that:

Hypothesis 3: The income of women in the ICT sector is negatively related to age.

#### **4.0 Methodology**

Given the large IT competent population that was to be surveyed, an online survey was considered to be the most appropriate methodology to use for data gathering. Whilst the use of online survey research is considered to be ‘...young and still evolving’ (Wright, 2005:1), the advantages and disadvantages of employing an online survey methodology are well documented (Andrews, Nonnecke, & Preece, 2003; Birnbaum, 2004; Couper, 2000; Kaye & Johnson, 1999; Wright, 2005). The potential respondents to the 2012 survey included female Members of the ACS, Members of similar ICT groups, Vocational Education, Under Graduate and Post Graduate students and women who self-identified as ICT workers. Potential respondents were contacted via the ACS, the ICT Council of Deans, State and Territory Industry Training Advisory Board’s (ITAB’s), social media and professional networking sites. Five hundred and forty four women completed the survey. The respondents were broadly representative of female Australian ICT workers (Deloitte, 2015).

The survey authors, mindful of the privacy issues surrounding data collection methods took precautions to ensure that the survey respondents remained anonymous. In order to minimise any privacy issues that may have arisen, to preserve the integrity of the survey and to mitigate the concerns of respondents, personal data such as names and contact details were disaggregated from the survey data and stored separately. The survey consisted of 35 questions that explored the respondent’s age, qualifications, ACS membership, remuneration, time spent and roles in the ICT industry. The survey also asked participants to identify the factors that influenced their career choices. The questions were both quantitative and qualitative in nature and were designed to obtain statistical as well as descriptive responses. Potential survey respondents were contacted, via email and social media prior to the release of the survey. Follow up contact was initiated in order to maximise the response rate.

The statistical software package SPSS version 19 was used to analyse the survey data. Since most of the data collected through the survey is categorical in nature, a Pearson Chi-Square analysis was conducted on the variables to test the hypothesis.

#### **5.0 Survey Respondent Demographics**

Approximately 97 per cent of survey respondents resided in Australia. The remainder indicated they lived overseas. Eighty-three per cent were Australian citizens. The highest proportion of respondents were from New South Wales (26 per cent), followed by Victoria, Western Australia, Queensland, the Australian Capital Territory, South Australia, The Northern Territory and Tasmania. Ninety-four per cent resided in an urban area; six percent in a rural area and; less than one percent lived in a remote location. Fifty-seven percent of respondents were under the age of 45. Approximately 14 per cent were aged between 45 and 49; 12 per cent were aged between 50 - 54; nine per cent were in the 55 - 60 age range; and eight percent were aged over 60. The highest proportion of respondents (35 per cent) was in the 25 – 39 age range. The majority of respondents had post graduate qualifications. Approximately 14 per cent indicated that their highest educational qualification was at the Vocational education level and included either a Certificate or a Diploma; 31 per cent had an Under-Graduate degree; 18 per cent had a Post-Graduate Degree or a Diploma; 23 per cent had a Masters; and nine percent has a Doctoral qualification.

Thirty-seven per cent of respondents had worked in the ICT sector less than 10 years; 30 per cent had been in the ICT sector between 10 - 20 years; 28 per cent has been in the sector for more than 20 years. Four per cent of respondents did not work in the ICT industry. The majority (70 per cent) of respondents were employed full time. Nine per cent were employed part time; 3 per cent were on short term contracts; 1 per cent was employed on a casual basis; 6 per cent were self-employed; 6 per cent were studying either part time or full time; and 6 per cent were either retired or unemployed. The survey respondents were employed in a range of roles. Approximately 13 per cent were employed in an ICT consulting role; 11 per cent were in IT management; 9 per cent were project managers; 8 percent were in executive/management positions; and 8 per cent were business analysts. The remainder of the respondents (approximately 50 per cent) were employed in relative small numbers as document writers, project leaders, graphics designers, programmers, research and development, teaching, data base administrators, computer support, sales and marketing, web developers, help desk support, software engineers and ICT security. Approximately 8 per cent were employed in “other” occupations that included areas as diverse as accounting, library management, educational design, medical practice management, journalism, ICT skills assessor and email management.

Eleven percent of respondents earned less than \$50 000 per annum; 17 per cent earned between \$50 000 - \$75 000; 10 per cent earned between \$75 000 - \$90 000; 19 per cent earned \$90 000 - \$110 000; 22 per cent earned \$110 000 - \$150 000; eight per cent earned between \$150 00 and \$200 000; and three per cent earned more than \$200 000 per annum

## 6.0 Data Analysis

A Pearson Chi-square test was performed to examine the relationship between the dependent variable “Age” and the independent variables “Promotion Opportunities; Employment; and Income”

### 6.1 Age and Promotion Opportunity

A Pearson Chi-square test was performed to examine the relationship between the variables “Age” and “Time since Last Promotion” of respondent who were employed on either a permanent or part time basis. The relationship between these two variables was found to be significant ( $X^2(84, N = 544) = 720.829, p < 0.01$ ). As indicated in Table 1, the length of time since last promotion increases with age. Women in the 30 – 35 year age range were more likely to be promoted within three years of service. For women in the 50 – 54 age cohort the time since their last promotion was more likely to be five or more years. Therefore, Hypothesis 1 is supported. Promotion opportunities for women in the ICT sector are related negatively to age.

**Table 1: Age and Frequency of Promotion**

Time since last promotion?	Number	18-20	21-24	25-29	30-34	35-39	40-44	45-49	50-54	55-60	>60	Total
>12 months ago	Count	0	3	15	18	6	11	16	12	3	1	85
	%	0.0%	3.5%	17.6%	21.2%	7.1%	12.9%	18.8%	14.1%	3.5%	1.2%	100.0%
Within the last 3 years	Count	0	2	12	20	17	16	12	10	9	3	101
	%	0.0%	2.0%	11.9%	19.8%	16.8%	15.8%	11.9%	9.9%	8.9%	3.0%	100.0%
Within last 5 years	Count	0	0	0	1	8	4	8	5	5	4	35
	%	0.0%	0.0%	0.0%	2.9%	22.9%	11.4%	22.9%	14.3%	14.3%	11.4%	100.0%
>5 years ago	Count	0	0	1	0	1	8	7	11	8	2	38
	%	0.0%	0.0%	2.6%	0.0%	2.6%	21.1%	18.4%	28.9%	21.1%	5.3%	100.0%
Never promoted	Count	1	5	11	17	7	13	12	11	9	4	90
	%	1.1%	5.6%	12.2%	18.9%	7.8%	14.4%	13.3%	12.2%	10.0%	4.4%	100.0%
Total	Count	1	10	39	56	39	52	55	49	34	14	349
	%	.3%	2.9%	11.2%	16.0%	11.2%	14.9%	15.8%	14.0%	9.7%	4.0%	100.0%

### 6.2 Age and Employment

A Pearson Chi-square test was performed to examine the relationship between the variables “Age” and “Employment Category”. As Table 2 indicates there is a strong positive relationship between the variables “Age” and “Self-employment”. The relationship between these two variables was found to be significant,  $X^2(120, N = 544) = 1420.82, p < 0.01$ . An analysis of the data found that as women age they are more likely to be self-employed than their younger contemporaries. Therefore, Hypothesis 2: Age is related to employment status, is also supported.

**Table 2: Age and Employment Category**

Age	Count	Blank	Full-time	Part-time	Self-employed	Short term Contract	Causal	Full-time Study	Part-time Study	Other duties	Retired	Void	Total
	Count	6	0	0	0	0	0	0	0	0	0	0	6
	%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
18-20	Count	0	1	0	0	0	0	3	1	0	0	0	5
18-20	%	0.0%	20.0%	0.0%	0.0%	0.0%	0.0%	60.0%	20.0%	0.0%	0.0%	0.0%	100.0%
21-24	Count	0	16	2	0	0	3	6	0	2	0	0	29
21-24	%	0.0%	55.2%	6.9%	0.0%	0.0%	10.3%	20.7%	0.0%	6.9%	0.0%	0.0%	100.0%
25-29	Count	0	45	6	2	3	0	6	0	4	0	0	66
25-29	%	0.0%	68.2%	9.1%	3.0%	4.5%	0.0%	9.1%	0.0%	6.1%	0.0%	0.0%	100.0%
30-34	Count	0	55	10	2	0	0	2	0	2	0	0	71
30-34	%	0.0%	77.5%	14.1%	2.8%	0.0%	0.0%	2.8%	0.0%	2.8%	0.0%	0.0%	100.0%
35-39	Count	0	42	2	2	2	2	2	2	1	0	0	55
35-39	%	0.0%	76.4%	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%	1.8%	0.0%	0.0%	100.0%
40-44	Count	0	58	6	3	3	0	0	3	0	0	0	73
40-44	%	0.0%	79.5%	8.2%	4.1%	4.1%	0.0%	0.0%	4.1%	0.0%	0.0%	0.0%	100.0%
45-49	Count	0	59	5	6	4	2	1	0	1	0	0	78
45-49	%	0.0%	75.6%	6.4%	7.7%	5.1%	2.6%	1.3%	0.0%	1.3%	0.0%	0.0%	100.0%
50-54	Count	0	53	5	5	2	0	0	1	0	0	0	66
50-54	%	0.0%	80.3%	7.6%	7.6%	3.0%	0.0%	0.0%	1.5%	0.0%	0.0%	0.0%	100.0%
55-60	Count	0	32	5	6	0	0	1	2	4	1	0	51
55-60	%	0.0%	62.7%	9.8%	11.8%	0.0%	0.0%	2.0%	3.9%	7.8%	2.0%	0.0%	100.0%
>60	Count	0	14	5	5	3	1	0	0	1	15	0	44
>60	%	0.0%	31.8%	11.4%	11.4%	6.8%	2.3%	0.0%	0.0%	2.3%	34.1%	0.0%	100.0%
Total	Count	4	375	46	31	17	8	21	9	15	16	2	544
Total	%	0.7%	68.9%	8.5%	5.7%	3.1%	1.5%	3.9%	1.7%	2.8%	2.9%	0.4%	100.0%

### 6.3 Age and Salary/Income

A Pearson Chi-square test on the variables “Age” and “Salary Range” indicated a positive relationship between these two variables ( $X^2(96, N = 544) = 778.77, p < 0.01$ ). As Table 4 indicates income increases as women age. However, female earnings peak when women reach the 40 – 49 age range and then decline in subsequent years. Approximately 65.6 per cent of respondents in the 21-24 age range received a salary less than \$75K. For this age cohort their salary peak was in the range of \$50-\$75K. Almost 57.7 per cent of the cohorts in the 40 – 49 age range earned between \$90-\$200K per annum. However, 62.3 percent of the 55 – 60 age cohorts earned between \$75-\$150K per annum.

Not only did the respondents earning decrease after the age of 49, but more women in this age group experienced a decline in income. Based upon this evidence, Hypothesis 3 is correct. Age is related to income.

**Table 3: Age and Salary Range**

Age	Count	Blank	<50k	50k-75k	76k-90k	91k-110k	111k-150k	151k-200k	<200k	Void	Total
	Count	4	0	0	0	0	0	0	0	0	4
	%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
18-20	Count	0	1	0	0	0	0	0	0	4	5
	%	0.0%	20.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	80.0%	100.0%
21-24	Count	0	9	10	2	0	0	0	0	8	29
	%	0.0%	31.0%	34.5%	6.9%	0.0%	0.0%	0.0%	0.0%	27.6%	100.0%
25-29	Count	0	8	21	17	5	5	0	0	10	66
	%	0.0%	12.1%	31.8%	25.8%	7.6%	7.6%	0.0%	0.0%	15.2%	100.0%
30-34	Count	0	7	16	13	19	10	2	0	4	71
	%	0.0%	9.9%	22.5%	18.3%	26.8%	14.1%	2.8%	0.0%	5.6%	100.0%
35-39	Count	0	4	5	7	13	15	4	2	5	55
	%	0.0%	7.3%	9.1%	12.7%	23.6%	27.3%	7.3%	3.6%	9.1%	100.0%
40-44	Count	0	3	13	11	13	19	10	1	3	73
	%	0.0%	4.1%	17.8%	15.1%	17.8%	26.0%	13.7%	1.4%	4.1%	100.0%
45-49	Count	0	7	9	9	20	13	12	6	2	78
	%	0.0%	9.0%	11.5%	11.5%	25.6%	16.7%	15.4%	7.7%	2.6%	100.0%
50-54	Count	0	4	3	15	12	18	8	5	1	66
	%	0.0%	6.1%	4.5%	22.7%	18.2%	27.3%	12.1%	7.6%	1.5%	100.0%
55-60	Count	0	3	4	10	8	14	3	1	8	51
	%	0.0%	5.9%	7.8%	19.6%	15.7%	27.5%	5.9%	2.0%	15.7%	100.0%
>60	Count	0	7	1	7	3	9	1	0	16	44
	%	0.0%	15.9%	2.3%	15.9%	6.8%	20.5%	2.3%	0.0%	36.4%	100.0%
Total	Count	4	53	82	91	93	103	40	15	63	544
	%	0.7%	9.7%	15.1%	16.7%	17.1%	18.9%	7.4%	2.8%	11.6%	100.0%

## **7.0 Discussion:**

This study highlights that older women in Australian ICT sector face significant workplace hurdles and challenges. Building on the social identity theory, it is argued that this cohort of workers experiences an environment that is shaped by ageist attitude leading to their dis-engagement and ultimately withdrawal from the ICT sector. The demographic profile of the respondents indicates that female ICT workers in Australia are professionally well-qualified with employment in predominantly urban rather than rural and regional areas. More than 80 per cent of female workers have a higher degree or diploma. Despite the high level of technical literacy, female workers encounter situation of diminished career advancement and promotion opportunities. The research data indicates that while there is a fair chance for young female workers to get promoted in the first three years of their employment, it becomes progressively more difficult for older female employees to achieve career advancement.

It is evident that female workers' engagement with ICT sector overall is predominantly through full time employment with 70 per cent of workers engaged on a full time basis. This pattern seems more pronounced till about 54 years of age. There is statistically significant data indicating that as women age (past 54 years), they demonstrate higher tendency to move out of paid employment to self-employment. There is a noticeable decline in full time employment from 80 to 63 percent for older female employees. There is also an increase in female self-employment from 7 to 12 percent consistent with the pattern of other older professionals. The qualitative data suggests that the dis-heartening work environment coupled with limited growth opportunities are the key reasons that prompt older female workers to consider the self-employment option.

It has been argued that promotion and career advancement are linked to wage increases and are a key determinant of organizational authority and increased job satisfaction (Bihagen & Ohls, 2006; Francesconi, 2001). Salary data of female ICT workers over their working life however demonstrates an interesting pattern. The relationship between employee age and income is not linear as is normally the case with other professional groups such as Law, Medicine and Academia. The income of older female workers is not aligned with their employment longevity or overall experience. The proportion of high wage earners decline significantly from 8 to 2 percent after 50-54 age brackets. Qualitative data corroborates that the restrictive promotional and career progression opportunities reported earlier is perhaps a significant contributor to this peculiar pattern. Lack of advancement opportunities appears to be a major contributor to female ICT employee to leave employment (Moss, Salzman, & Tilly, 2008).

The weight of these findings strongly indicates that the employment experience of female ICT professionals is significantly altered once they age beyond 54 years. The three noticeable changes older employees experience relate to wages, employment status and access to career advancement opportunities. There is evidence to indicate that (1) the overall wage is likely to peak for employees in mid 50s with possible decline as they age further; (2) experiencing longer delays before promotional opportunities are available; and (3) higher incidence of self-employment for older female workers. Although the overall employment trend is in line with the overall workforce trends for women in Australia, the prevailing narrative of under-representation of older women and specific manifestation do not augur well for an industry that has constantly suffered chronic shortage of skilled workforce.

Employment-related decisions such as employment status, wages, promotion etc. should be based on criteria related to merit and ability. This according to Yap and Konard(2009) can be instrumental in encouraging all employees to put their talents and skills to good use and contribute to their fullest potential towards their organization and society. Making the promotion process transparent at all levels and matching employees with jobs based on merit and abilities rather than characteristics such as age and gender will promote equity and remove barriers for all participants in the labor market. The situation as it currently exists cannot be ignored if Australian ICT sector wishes to maintain high level of international competitiveness.

## **8.0 Conclusion**

ICT has become the core foundation of every sector of every economy globally with positive impact on GDP of both developed and developing countries alike (Kramer, Jenkins, & Katz, 2007). Given the importance of this sector in the Australian economy and the fact that the ICT sector has always suffered chronic shortage of skilled workforce globally (Kramer et al., 2007), a motivated, diverse and balanced workforce at all levels of organizations can be advantageous for both workers and organizations.



From the organization's perspective, non-discriminatory employment practices can lead to higher productivity, improved workforce retention and ultimately improved performance. Despite the important contribution of women to Australian workforce, there has been limited research exploring the role of age and gender on ICT workforce employment experience. The paper addresses this unanswered question by examining gender and ageism in the Australian Information Communications Technology industry. The data was collected through an on line nation-wide online survey of women who self-identified as working in the ICT sector. An analysis of the demographic characteristics and career experiences of the 544 survey respondents, determined that age impacted on the career experiences of women in the ICT sector. Statistically significant results indicated that age was related to changes in employment status, career advancement and income level.

Poor retention of women, particularly matured aged workers, should be a matter of concern for ICT sector and policy makers alike. There is an urgent need to address the underlying causes of age and gender discrimination. Given the projected demographic shift in Australia, ICT sector can ill afford to neglect the potential of female workforce participation in building institutional capacity. As an area of future research, a more comprehensive assessment is needed throughout the ICT industry to assess the experiences of both female and male employees to grapple with the age and gender issues.

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