

PREDICTORS OF WOMEN ACADEMICS' CAREER PROGRESSION: EVIDENCE FROM AUSTRALIA

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ABSTRACT

The issue of glass ceiling, invisible barriers that limit the access of women to higher level occupations and positions, continues to be of concern. Prior studies in this topic have been mostly conducted based on two perspectives: systemic and personal. However, neither of these two perspectives have managed to completely explain the glass ceiling phenomena in organizations. This paper focuses on higher education institutions in Australia. Incorporating both of these perspectives, this paper investigates the factors that influence career progression of women academics in Australian universities.

Keywords: women academics, career progression, glass ceiling, Australia

INTRODUCTION

Over the last sixty years, since the World War II, there has been a steady increase of women's participation in the Australian workforce. Proportions of women in the labor force have increased from 22% in 1947 to 45% in 2006 (Australian Bureau of Statistics, 2006; Eccles, 1983). A significant number of women in Australia increasingly expect to combine marriage, motherhood and job. This growing trend of women's participation in the Australian workforce is consistent with trends in other industrial countries such as the United States and Great Britain (see e.g. Smith, Crowley, & Hutchinson, 1993). However, despite the increasing participation of women in the Australian workforce, there are indications that women still find it difficult to reach senior management positions. The representation of women in management on a national scale still remains poor – executive management (12%) and board directorships (8.7%) (Equal Opportunity for Women in the Workplace Agency, 2006a). This suggests unequal advancement opportunities and the presence of invisible barriers that limit the access of women to higher level positions, which have popularly come to be known as *the glass ceiling* (International Labour Organization, 2002).

In Australia, there is a government agency, the Equal Opportunity for Women in the Workplace Agency (EOWA), which consults with Australian employers

annually on the subject of their companies' equal opportunity initiatives. Equal opportunity means that all employees have equal access to the opportunities that are available at work (Equal Opportunity for Women in the Workplace Agency, 2006b). This agency also encourages companies to promote women career progression through a variety of programs. The Australian law that governs this issue is the Equal Opportunity for Women in the Workplace Act 1999 (previously named Affirmative Action Act), which has been implemented since 1986.

Higher education institutions in Australia are among the first group of employers to be covered under the Equal Opportunity for Women in the Workplace Act 1999, and as to compliance with the requirements of the Act, this sector has been considered as a highly performing sector for many years (Davis & Pratt, 1998). However, the latest available data from the Australian Government Department of Education, Science and Training shows that the majority of women academics employed in the universities still hold only the lower ranks of the academic positions. The academic rank in Australian universities starts with associate lecturer (level A) and rises to lecturer (level B), senior lecturer (level C), associate professor (level D), and professor (level E), respectively. Women academics in 2005 comprise 40% of the total number of academics (Australian Government Department of Education, Science and Training, 2006), which indicates quite a considerable proportion of women's participation. In spite of this, among all women academics in Australia, the representation of those at above senior lecturer ranks (associate professor and professor combined) is only 12%, the representation of those at senior lecturer rank is only 21%, and leaves the majority (67%) at lecturer or associate lecturer ranks. In contrast, among all men academics in Australia the representation of those at above senior lecturer ranks is 29%, the representation of those at senior lecturer rank is 26% and hence leaves only 45% at lecturer or associate lecturer ranks. These facts have remained fairly constant over the last decade (see Table 1) and led to an assumption that the glass ceiling phenomena may have remained strong in Australian universities, and insinuated a need to investigate the issues.

Gender imbalance in universities is not confined to Australia – it appears to be a global phenomenon. It also exists in the other Western cultures, such as in the European context (e.g. Benschop & Brouns, 2003; Doherty & Manfredi, 2006; Forster, 2001), and also in the other cultural settings, such as in the Asian context (e.g. Thanacoody, Bartram, Barker, & Jacobs, 2006).

Table 1
Australian Academics by Academic Rank and Gender, 1997–2005

Year	Total men	Levels D & E		Level C		Level B		Level A	
		Numbers	Total men (%)	Numbers	Total men (%)	Numbers	Total men (%)	Numbers	Total men (%)
1997	20,479	5,302	26	5,791	28	6,489	32	2,897	14
1998	19,882	5,320	27	5,608	28	6,129	31	2,825	14
1999	19,490	5,339	27	5,538	29	5,892	30	2,721	14
2000	19,330	5,498	28	5,460	28	5,727	30	2,645	14
2001	19,271	5,512	29	5,466	28	5,676	29	2,617	14
2002	19,484	5,698	29	5,384	28	5,735	29	2,667	14
2003	19,854	5,828	30	5,391	27	5,801	29	2,834	14
2004	20,303	6,006	30	5,418	27	5,928	29	2,951	14
2005	23,337	6,878	30	6,060	26	6,866	29	3,533	15

Year	Total women	Levels D & E		Level C		Level B		Level A	
		Numbers	Total women (%)	Numbers	Total women (%)	Numbers	Total women (%)	Numbers	Total women (%)
1997	10,238	863	8	1,961	19	4,466	44	2,948	29
1998	10,267	893	9	2,022	20	4,429	43	2,923	28
1999	10,257	975	9	2,135	21	4,385	43	2,762	27
2000	10,575	1,057	10	2,270	21	4,434	42	2,814	27
2001	11,028	1,141	10	2,394	22	4,592	42	2,901	26
2002	11,514	1,272	11	2,555	22	4,755	41	2,932	26
2003	12,050	1,385	11	2,713	23	4,917	41	3,035	25
2004	12,739	1,534	12	2,851	22	5,171	41	3,183	25
2005	15,615	1,881	12	3,319	21	6,327	41	4,088	26

Source: Department of Employment, Education, Training and Youth Affairs (1997, 1999), Department of Education, Training and Youth Affairs (1999, 2001), Commonwealth Department of Education, Science and Training (2002, 2003a, 2003b, 2004), Australian Government Department of Education, Science and Training (2006).

The existing literature concerning under-representation of women academics in higher classifications has been focused on two major perspectives: systemic and personal (see e.g. Allen, 1990; Burton, 1997; Bradley, 1999; Coaldrake & Stedman, 1999; Deane, Johnson, Jones, & Lengkeek, 1996). However, most of this literature has been dominated by prescriptive and conceptual approaches. More (1999) argued that while systemic and personal perspectives on women in management are helpful, neither seems to have significantly altered organizational realities. Empirical research that incorporates multidimensions of

systemic and personal barriers of women academics' career progression has been scarce (Burton, 1997). In response to these concerns, this paper incorporates both systemic and personal perspectives to investigate the factors hindering Australian women academics' progression to higher classifications.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Gender Inequality and Glass Ceiling Phenomena in the Workplace

Many sociologists believe that the fundamental source of gender inequality is found in the workplace (Curry, Jobu, & Schwirian, 1996). Prior research on women and work has been dominated by three topics: gender segregation, income/pay inequality, and unequal advancement opportunities (Andersen, 1997b).

Gender segregation refers to "the pattern whereby women and men are situated in different jobs throughout the labor force" (Andersen, M. L., 1997: 114). This definition is also known in some literature as inter-occupational segregation or horizontal segregation (Bevan, 1998). Previous women-in-management research showed the persistence of gender segregation in organizations (see Calas & Smircich, 1997). Income/pay inequality refers to the earnings gap between working men and working women. Although the gap varies from occupation to occupation, previous statistics show that in practice in almost all occupations women earn less than men on average (see Curry et al., 1996). Unequal advancement opportunities relate to obstacles that limit the access of women to higher level occupations and positions (Northouse, 1997). This definition is also known in some literature as intra-occupational segregation or vertical segregation (Bevan, 1998). These obstacles have popularly come to be known as the glass ceiling, and been considered as the most significant problem facing women managers (see e.g. Andersen, M. L., 1997; Jackson, 2001; Northouse, 1997). Hence, they have become dominant topics in the women-in-management research (see e.g. Calas & Smircich, 1997; Schreiber, Price, & Morrison, 1993; Still, 2006).

Systemic Explanations of the Glass Ceiling Phenomena

Within the systemic perspective of glass ceiling phenomena in the workplace, there are two factors that are commonly discussed: social capital and structural (see e.g. Burton, 1997; Metz & Tharenou, 2001; Still, 1994).

Social capital

Inequality in the workplace has been linked to social capital within organizations (e.g. discrimination, male-dominated culture, stereotypes, or exclusion from the network). It is believed that social capital factors hinder women's ability to advance to higher level positions (e.g. Alvesson & Billing, 1992; Burton, 1997; Bradley, 1999; Gale, 1999; Maddock, 1999; Marshall, 1984, 1992, 1993; Northouse, 1997; Ragins, Townsend, & Mattis, 1998; Still, 1994, 2006; Tharenou, 1999; Thomas, 1991; Todd & Bird, 2000).

Discrimination against women occurs at four levels: direct intended discrimination, direct unintended discrimination, indirect discrimination, and systemic discrimination (Davies, 1982). The direct intended discrimination occurs when one knowingly discriminates women on the basis of a certain discriminatory belief. The direct unintended discrimination occurs when one unintentionally treats one woman and one man of equal qualifications differently. The indirect discrimination occurs where employment practices appear to have a disparate effect on women. The systemic discrimination is the combination of discriminatory attitudes and practices which directly and indirectly decrease employment and promotion opportunities for women.

Male-dominated culture is based on values and characteristics associated with masculine gender-role stereotypes (Large & Saunders, 1995). In this situation, the organizational culture is dominated by male definition and characterization of events and relationships, and thus, aspirations of women are ignored and not seriously considered (e.g. Burton, 1997; Karpin, 1995; Kloot, 2004; Maddock, 1999; Marshall, 1995; Ragins et al., 1998; Sinclair, 1994). In some cases, women eventually adopt deliberate behaviors to blend in with the cultures to gain acceptance.

In the case of stereotypes, there are attributes which are conveyed to individual men and women simply by virtue of their gender (Heilman, 1997; Northouse, 1997; Thomas, 1991). Women are considered to be weak and passive, and thus, indecisive, dependent, emotional, non-objective and insecure. Men, on the other hand, are considered to be strong and active, and thus, decisive, independent, rational, objective and self-confident. However, in terms of qualities of warmth and expressiveness, women are considered to be tender, understanding, concerned with others and comfortable with their feelings. Men are considered to be just the opposite.

Finally, exclusion from the influential male network has been found to be a significant barrier to women's career progression (Bellamy & Ramsay, 1994; Burke, 1997; Ragins et al., 1998).

To address the above issues, the following hypotheses are proposed:

- H_{1a}: Levels of discrimination experienced by women academics at the universities where they are employed are negatively related to the likeliness of them to progress to higher academic ranks.
- H_{1b}: Levels of male-dominated culture felt by women academics at the universities where they are employed are negatively related to the likeliness of them to progress to higher academic ranks.
- H_{1c}: Levels of stereotyping felt by women academics at the universities where they are employed are negatively related to the likeliness of them to progress to higher academic ranks.
- H_{1d}: Levels of exclusion from the network experienced by women academics at the universities where they are employed are negatively related to the likeliness of them to progress to higher academic ranks.

Structural

It has been found that many women academics feel that there is lack of career guidance and collaborative goal setting from the institutions for individual academics (see e.g. Bain & Cummings, 2000; Deane et al., 1996). This can lead to disadvantages for women academics in their career planning. Another structural barrier that has been reported is the ambiguity of the promotion criteria (see e.g. Smith et al., 1993). For example, different criteria may be applied to selection, promotion and training, or different degrees of formality may be used to identify potential for promotion. Deane et al. (1996) mentioned that the promotion policies in Australian universities were poorly understood, not only by the women academics but also by the heads, deans, and members of professoriate. These may ultimately limit the possibility of progression for women academics. In view of these, the following hypotheses are proposed:

- H_{2a}: Levels of career support felt by women academics at the universities where they are employed are positively related to the likeliness of them to progress to higher academic ranks.
- H_{2b}: Degrees of clarity of promotion criteria considered by women academics at the universities where they are employed are positively related to the likeliness of them to progress to higher academic ranks.

Personal Explanations of the Glass Ceiling Phenomena

The personal perspective of the glass ceiling phenomena in the workplace includes two factors: human capital and individual (see e.g. Burton, 1997; Tharenou, 1999).

Human capital

Human capital is normally used as a core in the criteria of promotion for academics (see Coaldrake & Stedman, 1999). Human capital, in general, is defined as productive things that employees own (i.e. skills and knowledge) (Becker, 1993). It has been normally suggested that organizations believe that there are three factors that prevented women from being promoted to senior level positions: lack of qualifications, lack of experience, and lack of vision and leadership skills (Still, 1988, 1990). For an academic, there are five factors that can be included as human capital academic qualifications, years of experience, research productivity, administration, and teaching quality/responsibility (Allen, 1990; Coaldrake & Stedman, 1999; Deane et al., 1996). However, prior studies have not provided any conclusive evidence that shows relationships between human capital and poor representation of women academics in the senior level classifications (see Allen, 1990; Burton, 1997; Cass, 1983; Probert, 1998), and hence leads to a need for investigating this issue further. In this study, human capital is assumed as a fundamental factor for women academics in achieving higher classifications, and accordingly the following hypotheses are proposed:

- H_{3a}: Levels of women academics' educational degrees are positively related to the likeliness of them to progress to higher academic ranks.
- H_{3b}: Periods of women academics' employment are positively related to the likeliness of them to progress to higher academic ranks.
- H_{3c}: Levels of women academics' research productivity are positively related to the likeliness of them to progress to higher academic ranks.
- H_{3d}: Levels of women academics' engagement in administration are positively related to the likeliness of them to progress to higher academic ranks.
- H_{3e}: Levels of women academics' teaching responsibility are positively related to the likeliness of them to progress to higher academic ranks.

Individual

Allen (1990) mentioned that there are a great deal of incompatibility between women's domestic (individual) roles and their academic work roles, which might

lead to women's unequal representation at the senior level classifications. A number of individual dimensions have been identified as barriers for women's career progression, such as perceived conflict between home and work, family support, marital status, and number of children and/or other dependants (see e.g. Smith et al., 1993; Northouse, 1997). Bradley (1999) suggested that domestic related commitments limit the opportunities for many women academics to build their academic capital, such as research outcomes or administrative experience, which may eventually affect their chances for promotion. Accordingly, the following hypotheses are proposed:

- H_{4a}: Levels of women academics' home responsibility are negatively related to the likeliness of them to progress to higher academic ranks.
- H_{4b}: Levels of women academics' family support are positively related to the likeliness of them to progress to higher academic ranks.
- H_{4c}: Women academics who are single are more likely to progress to higher academic ranks than women academics who have partners.
- H_{4d}: Women academics with fewer children and/or other dependants are more likely to progress to higher academic ranks than women academics with more children and/or other dependants.

RESEARCH METHODS

Major Variables and Data Analysis Method

To capture the predictors of the major barriers for women academics' progression to higher classifications, this study puts "academic rank" of women academics (AR) as the dependent variable, and related it with its 15 independent variables: discrimination (DI), male-dominated culture (MC), stereotypes (ST), exclusion from the network (EN), career support (CS), promotion criteria (PC), level of education (LE), years of experience (YE), research productivity (RP), administration (AD), teaching responsibility (TR), home responsibility (HR), family support (FS), relationship status (RS), and number of children and/or dependants (CD). These variables and their indicators are developed from various prior works of Allen (1990), Bradley (1999), Burton (1997), Cass (1983), Coaldrake and Stedman (1999), Deane et al. (1996), Gale (1999), Large and Saunders (1995), Northouse (1997), Probert (1998), Smith et al. (1993), Stiver-Lie, Malik, and Harris (1994), and Tharenou (1999).

The dependent variable is categorised into five classifications: associate lecturer rank, lecturer rank, senior lecturer rank, associate professor rank, and professor

rank. It can be seen from this classification that there is a clear ordering of the variable. Hence, the dependent is a polytomous ordinal variable, while the independents are interval, continuous, ordinal and categorical variables. The analysis compared the career progress of women academics across these five classifications. Accordingly, the ordinal logistic regression method was used (see e.g. Field, 2000; Christensen, 1997). This method can be used to model the conditional probability distribution of the ordinal score as a function of the covariates (see Agresti, 2002; Harrell, 2001; Johnson & Albert, 1999).

Instrument and Data

The main aim of this study is to explore information about major predictors that affect career progression of women academics in Australia. Therefore, the research method that was chosen for this study should appropriately fit this aim (see Frederickson, 1983). To ensure the significance of the results in this study, a large amount of data is needed. Quantitative methods, such as surveys, can provide the necessary amount of data (see Calas & Smircich, 1997), and hence chosen for this study. A Web questionnaire was designed and used to minimise logistical, time and cost barriers. A web site was assigned to place a questionnaire in which the respondents can fill in their responses on the screen, and submit their responses online. The design of the Web questionnaire was made to ease the process of filling out the answers, with pull-down menus, radio buttons, and spaces for partially closed responses. Similar to an anonymous mailed questionnaire, the Web questionnaire was designed where no personal data (identity) of respondents was collected.

The target population included women academics from level A (associate lecturer) to level E (professor) at three universities in Sydney: the University of Sydney (an older and high research-focused university), Macquarie University (a newer and moderate research-focused university), and the University of Western Sydney (a post-87 and low research-focused university). These three universities represented three different types of universities in terms of era of establishment and research orientation. Older universities were established prior to the binary system (pre-1964), newer universities were established during the binary system (1964–1987), and post-87 universities were established during the Unified National System (post-1987). Research orientation of each of these three universities was determined based on research clusters prepared by the Australian Department of Education, Training and Youth Affairs, Higher Education Division (1998).

A sample of the target population was identified and obtained from the publicly available staff data on each university's Web site. The data listed 184 women academics at the University of Sydney, 230 women academics at the Macquarie

University, and 285 women academics at the University of Western Sydney, a total target population of 699 respondents, which included 90 associate lecturers, 335 lecturers, 173 senior lecturers, 71 associate professors, and 30 professors.

With regard to the sample size requirement under the logistic regression analysis, the statistic literature suggests minimum sample size of 10 cases per independent variable (e.g. Bull, 1993; Cohen, 1988; Green, 1991; Hsieh, 1989; Whittemore, 1981). There are 15 independent variables in the model, which create a sample size requirement of at least 150 valid responses. At the end of the data collection process, a total of 234 valid responses were received (60 from University of Sydney, 81 from Macquarie University, and 93 from University of Western Sydney), an overall response rate of 33.5%. These included responses from 24 associate lecturers, 108 lecturers, 61 senior lecturers, 27 associate professors, and 14 professors, which showed a relative comparability between the compositions of the target population and the response samples.

DATA ANALYSIS AND THE FINDINGS

Exploratory Analysis

Among the 15 independent variables, there were nine interval variables: DI, MC, ST, EN, CS, PC, AD, HR, and FS. To evaluate the reliability of these variables, which were measured on Likert scales using several indicators, a reliability analysis (RA) was conducted to analyze the internal consistency of each variable. In this analysis, the Cronbach's alpha measure was used. It was found that the Cronbach's alpha values were 0.74, 0.85, 0.95, 0.93, 0.86, 0.91, 0.76, 0.74, and 0.90, respectively for DI, MC, ST, EN, CS, PC, AD, HR, and FS constructs. All values were above the acceptable reliability value of 0.7, and therefore, this analysis confirmed that all of these nine variables were reliable. The other six independent variables (LE, YE, RP, TR, RS, and CD) were continuous, ordinal or categorical. Hence, there was no issue about internal consistency for these six variables. Overall, the exploratory analysis confirmed that all variables could be used in the logistic regression analysis.

Ordinal Logistic Regression Analysis

Assessment of the overall model fit

The overall model fit was examined to ensure the significance of the model and the relationships between the dependent and independent variables. The issue of fit dealt with the probability that the observed values of the dependent variable

may be predicted from the observed values of the independent variables. In logistic regression, a probability measure called the Log Likelihood is used (see e.g. Andersen, E. B., 1997; Field, 2000). In this analysis, it was found that the initial Log Likelihood (-2LL) value was 635.808. After the complete analysis, the final value of the -2LL was decreased to 409.123. Thus, the difference between the two -2LL measures gave a chi-square value of 226.685. The test for statistical significance of this chi-square showed a significance of less than 0.0001, which was less than 0.05, and therefore, it could be concluded that there was a significant relationship between the dependent variable and the set of the independent variables. The strength of this relationship was measured using the Nagelkerke R^2 (see Nagelkerke, 1991). It was found that the Nagelkerke R^2 value was 0.664, which showed a strong relationship. Finally, Pearson Goodness-of-Fit test statistic showed a significance of 1.000, greater than 0.05, and therefore, it could be concluded that the models estimates fit the data at an acceptable level.

Results of the overall model and hypothesis testing

The results of the overall ordinal logistic regression model and the testing of the hypotheses are presented in Table 2. It can be seen that there were six accepted hypotheses, which represented the links between the dependent variable academic rank (AR) and its six significant predictors: exclusion from the network (EN), promotion criteria (PC), level of education (LE), years of experience (YE), research productivity (RP), and administration (AD).

The Findings

In general, the model has a good predictive ability and relevance, and the relationships between the dependent variable and its independent variables are relatively strong. These are indicated by the model R^2 value of 0.664, and the significant results of the Log Likelihood and the Goodness-of-Fit.

Systemic impediments to career progression of women academics

The results of this study (see Table 2) show that only the exclusion from the network variable is significant in influencing the dependent variable academic rank. This confirms the previous suggestion that exclusion from the network is one of the most frequent barriers to the career progression of women (e.g. Burke, 1997; Henry, 1998; Ragins et al., 1998). The other social capital factors (discrimination, stereotypes, and male-dominated culture) were found to be insignificant, despite some previous suggestions that these three social capital factors affect the career progression of women academics in Australian universities (e.g. Burton, 1997; Gale 1999). A plausible explanation for this situation is either that networking is indeed more difficult for women than men,

or that the other social capital factors (discrimination, stereotypes, and male-dominated culture) in universities, while not directly influencing career progression of women academics, may indirectly create a situation where women academics with lower academic ranks experience more difficulties in gaining access to ideas, people, support, or opportunities.

Table 2
Results of the Overall Model and Hypothesis Testing

Independent variable	Estimate	Std. Error	Sig. *	Dependent variable (Academic rank) – Ordinal			
				Hypothesis	Proposed effect	Finding ~ #	Accepted (A) or Rejected (R)
Social capital							
Discrimination	-0.035	0.126	0.780	1a	-	NS	R
Male-dominated culture	0.244	0.127	0.054	1b	-	NS	R
Stereotypes	0.066	0.082	0.417	1c	-	NS	R
Exclusion from network	-0.316	0.098	0.001	1d	-	S [-]	Accepted
Structural							
Career support	-0.315	0.144	0.028	2a	+	S [-]	(R)^
Promotion criteria	0.385	0.100	0.000	2b	+	S [+]	Accepted
Human capital							
Level of education	0.867	0.206	0.000	3a	+	S [+]	Accepted
Years of experience	0.182	0.024	0.000	3b	+	S [+]	Accepted
Research productivity	0.060	0.010	0.000	3c	+	S [+]	Accepted
Administration	0.862	0.189	0.000	3d	+	S [+]	Accepted
Teaching responsibility	-0.017	0.012	0.164	3e	+	NS	R
Individual							
Home responsibility	-0.053	0.101	0.601	4a	-	NS	R
Family support	-0.194	0.108	0.073	4b	+	NS	R
Relationship status	0.265	0.317	0.403	4c	-	NS	R
Number of children and/or other dependants	0.071	0.108	0.509	4d	-	NS	R

Notes: * Sig. is the significance of the test
 ~ significance at the < 0.05 level
 # Significant (S); Non Significant (NS); [effect]
 ^ () indicates that the sign of observed effect is opposite to that proposed in the hypothesis

The other results from this study (see Table 2) show that the clarity of promotion criteria significantly influenced the dependent variable academic rank, while career support was found to be insignificant. This result is consistent with the prior suggestion that ambiguous criteria for promotion are one of the barriers to women's progression to higher classifications (e.g. Deane et al., 1998).

Personal impediments to career progression of women academics

The results of this study (see Table 2) show that overall human capital factors were significantly related to career progression (academic ranks), except for the teaching responsibility variable. The results are consistent with the prior suggestion that human capital is a major factor in women's career progression (e.g. Burton, 1997; Probert, 1998). The result regarding the teaching responsibility is not really surprising, since it has been suggested that matters related to teaching are in essence problematic and difficult to measure (see Allen, 1990).

While some previous literature suggested that barriers to women's progression to senior level positions may exist due to a variety of individual factors (e.g. Allen, 1990; Smith et al., 1993), the results of this study (see Table 2) show that individual factors are not the barriers to the progression of women academics in Australian universities to higher classifications.

CONCLUSION

This study found that, overall, human capital (research productivity, administration, level of education, and years of experience) were the leading factors that positively influenced career progression of women academics in Australia. Only one social capital factor (exclusion from the network) had a negative influence, one structural factor (the clarity of the promotion criteria) had a positive influence, and no individual factor was found to have an influence on career progression of women academics in Australia.

There are several important managerial implications that can be derived from this study. Firstly, it can be implied that the overall promotion process in Australian universities seemed to be (or at least partly) based on merit, which are presented in the forms of research productivity, administration, level of education, and years of experience. Secondly, this study found that there was no individual factor and only one social capital factor (exclusion from the network) that had a significant effect on women academics' efforts to advance to higher classifications. This may suggest that organizational policies that have been applied by Australian universities in supporting career progression of women academics may somehow work. Finally, the clarity in the promotion criteria in Australian universities needs to be improved in order that it will not affect career progression on women academics.

The existing literature in glass ceiling phenomena in higher education institutions has been dominated by prescriptive and conceptual approaches (see e.g. Burton,

1999; Bradley, 1999). Consequently, this study adds to the current body of knowledge in this area by providing an empirical contribution that may promote a significant further step towards a more integrated and comprehensive study of glass ceiling phenomena in universities, and in organizations, in general. Nevertheless, as always there are limitations that should be considered. Firstly, the target samples used in this study are women academics in universities in Sydney. Future studies using broader ranges of target population would certainly be desirable. Secondly, this study is an exploratory study that relied much of its process of formulating the initial hypotheses on the available conceptual and prescriptive-based literature. Although as an exploratory study, this process does not substantially affect the implications of the research. Future studies to substantiate the findings are however, greatly desirable.

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