CSCanada
Canadian Social Science
Vol. 14, No. 8, 2018, pp. 8-13
DOI:10.3968/10515

ISSN 1712-8056[Print]
ISSN 1923-6697[Online]
www.cscanada.net
www.cscanada.org

Research on Gender Differences in the Perception of Career Barriers: Based on the Perspective of Meta-Analysis

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Supported by Sichuan Normal University 2014 research fund Project (No. 46).

Received 17 June 2018; accepted 20 August 2018
Published online 26 August 2018

Abstract

Objective To Meta-analyze the gender differences in the perception of the current career barriers in China. **Methods** Four included study involving 3305 people, composed by experimental group of 1877 women, and control group of 1428 men. Conduct meta-analysis respectively on career barriers in terms of the overall perception, the internal perception and the external perception of gender differences. **Outcome** The overall perception and the external perception of male subjects' career barriers were lower than that of female subjects, while the internal perception was no difference between the two genders. **Conclusion** Compared with men, women perceived career barriers more from social, organizational, family and other external factors.

Key words: Meta-analysis; Career barriers; Gender differences

Fang, D. Y. (2018). Research on Gender Differences in the Perception of Career Barriers: Based on the Perspective of Meta-Analysis. *Canadian Social Science, 14*(8), 8-13. Available from: http://www.cscanada.net/index.php/css/article/view/10515
DOI: http://dx.doi.org/10.3968/10515

INTRODUCTION

Meta-Analysis

UK astronomer Airy proposed Meta-analysis firstly in 1861. In 1907, Goldberger from USA proposed the basic requirement to achieve modern Meta-analysis. The well-known statistician Fisher proposed "Combined P Value" which was known as the predecessor of Meta-analysis. The widespread use of Meta-analysis in social sciences was from 1930, and UK educational psychologist Glass named and defined Meta-analysis as "the statistical analysis of large collection of analysis results from individual studies for the purpose of integrating the findings" in 1976. Porta, in 2008, defined Meta-analysis as "a statistic method on individual research results, testing the sources of differences between research results, and quantifying the results with sufficient similarity. " From the definitions it is easy to see Meta-analysis is a process of quantitative and comprehensive analysis of multiple studies that are with the same research topic, which should include question-raising, searching related research literature, developing inclusion and exclusion criteria, describing basic information, quantitative statistical analysis, et al.

Career Barriers

Career Barriers, also known as Career Hindrance (Tian, 1998),"Profession Barrier" (Lu, 2004), "Career Development Barrier" (Zhang, 2005), et al.. Career Barrier was the earliest version of translation, which was translated by Taiwan Scholar CHEN Liru (1994), and was applied by several scholars (Ke et al, 2006) in related studies. Career Barriers is the most common term of translation and is used in this study. "Career Barriers", proposed by Crites (1969), is referring to the internal conflicts (i.e. Self-concept and achievement motivation) and external frustration (i.e. Gender or age discrimination, social stereotype, et al) during the whole process of career development. Later on, Swanson and Woitke (1997) defined Career Barrier further as events or situation from individual internally or from external environment that caused difficulties in career development, which is the most widely used today.

In China, in terms of Career Barriers, scholars are more focusing on the factor study, instead of definition study, following the definition by Swanson. There are limited scholars who involved definition study, i.e. LU Guixin considered Career Barriers refer to "Factors that individual unfit for a career", ZHAO Songping and ZHANG Rongxiang (2004) considered Career Barriers as "the gap between current career condition and ideal occupational condition". These definitions are relatively narrow as it only explained a minor part of Career Barriers.

Based on the above scholars' limited definition of Career Barriers, Career Barriers, on a large scale, refers to the internal and external factors that caused difficulties in career development of an individual.

1. METHODS

1.1 Document Retrieval

On 20th January 2016, The author searched on CNKI (China National Knowledge Infrastructure), including China Journal Full-text Database, China Excellent Doctoral Dissertation Database, China Excellent Master's Thesis Database, and China Important Conference Document Database, with topic of "Career Barriers – Female" in Chinese. In consideration of phrase and term translation, the author conducted search with topic of "Career Hindrance", found 280 related literatures. With literature backtracking, searched from the bibliography, six more literatures were added, five of which were from CNKI, the other one was a study by Taiwan Scholar TIAN Xiulan (two other studies from Taiwan scholar were not found in full article due its time of publish). Although the study by TIAN Xiulan was not included on CNKI, given the fact of its massive number of being cited, and being as the earliest study of female career barrier in Chinese speaking world, this literature is listed as supplementary literature. There are considerable number of relevant studies but study in Taiwan was from 1990's, while study in mainland China published after 2000. This is consistent with the timeline that Career Barrier study rose in Taiwan then introduced to mainland China during the new century and being as an emerging topic in the field of organizational behavior research.

1.2 Inclusion Criteria

Inclusion Criteria: (1) Research object is Chinese citizen (including citizens from mainland China and Taiwan); (2) Published or unpublished primary literature; (3) Independent variable is gender; (4) Reported effect value statistic average, standard deviation, sample size; (5) No extreme data(elimination based on principle of three positive and negative standard deviation).

To ensure the reliability of screening, the author invited two PhDs in Management to filter literature based on the above inclusion criteria simultaneously. In the end four literatures were included as in accordance with Meta-analysis, with total subject number of 3305, including 1877 female subjects and 1428 male subjects.

1.3 Variable Design

This study includes one main analysis and two subgroup analysis. In main analysis, test group is female subject; control group is male subject; independent variable is gender; dependent variable is overall perception (quantitative scores through self-assessment questionnaire); Research hypothesis is *H1*: The overall perception of male subjects' career barriers was lower than that of female subjects. Due to the definition of Career Barriers being as internal and external factors that caused individual's difficulties in career development, the various variables included in this study are divided into internal factors and external factors. Two subgroup analysis were conducted focusing on internal perception and external perception respectively, Research hypothesis respectively is *H2*: The internal perception of male subjects' career barriers was lower than that of female subjects; and *H3*: The external perception of male subjects' career barriers was lower than that of female subjects.

1.4 Document Coding and Data Extraction

Revman5 was used to code author, year of publish, resource, research object, sample size, variables, and effect value statistic, as in Table 1 below.

Table 1
Documentary Code

NO.	Author	Year	Object	Sample Size	Independent Variable	Dependent Variable	Effect Value Statistic
1	TIAN Xiulan	1998	Taiwan College Students	848	Gender	**Internal:** Self-awareness, Department of School, Competitive condition、Uncontrollable personal conditions; **External:** Gender discrimination, Support from family and others, Attitude towards women, Multiple role pressure, Discouragement of non-traditional occupation, Dissatisfied with work, Marriage and children's issues	Sample Size; Average; Standard deviation

To be continued

Continued

NO.	Author	Year	Object	Sample Size	Independent Variable	Dependent Variable	Effect Value Statistic
2	ZHANG Xiaobo	2005	College Students	529	Gender	**Internal:**Direction selection, Hesitant action, Discipline selection, Weak will, Personal qualities, Learning trouble, Learning situation, Lack of information; **External:** Gender barrier	Sample Size; Average; Standard deviation
3	WU Xuemei	2008	Undergraduate Students	1480	Gender	**Internal:** Professional knowledge, Social skills , Professional level; **External:** Employment competition, family background, Expecting from loved ones	Sample Size; Average; Standard deviation
4	ZHANG Xiaoyan	2009	Large and medium-sized enterprise employees	448	Gender	**Internal:** Personal support, Gender characteristics; **External:** Family pressure, Working pressure, Conflict pressure, Organizational support, Organizational characteristics, Team characteristics	Sample Size; Average; Standard deviation

1.5 Publication Bias Control

Publication Bias means statistically significant positive results are easier to publish, while negative study results with no significant meaning are more difficult to publish and then become a "drawer literature". Including all "drawer literature" can help to control publication bias but it is not practical. In order to avoid biased positive results of Meta-analysis led by the fact that inclusion of published literature are overwhelmingly positive, a series of methods to control biased publication were proposed by statisticians, such as Funnel plot, Egger linear regression test, Begg tank correlation tese, Trim and fill, Fail-safe number, et al. Due to the comparatively small number of research included in this study, Funnel plot was applied to consider publication bias which is simple and clear.

1.6 Heterogeneity Control

Heterogeneity means various variations between different studies when conducting Meta-analysis on studies from various objects, study design, and measurement methods. It is also called "Apple and Orange Problem". Using Meta-analysis on these studies is difficult to get accurate conclusions. Heterogeneity statistic test mainly include Q test and I^2 test. For small size of sample, I^2 test is with stronger test power. When I^2 is higher than 25%, it is with low heterogeneity; when I^2 is higher than 50%, it is with moderate heterogeneity; when I^2 is higher than 75%, it is highly heterogeneous. In research if I^2 is higher than 50%, Random Effect Model can be applied to control heterogeneity.

2. OUTCOME

2.1 Meta-Analysis of Gender Differences on Overall Perception of Career Barriers

To Meta-analyze gender differences on overall perception of career differences, heterogeneity test is the first conducted. As discussed above, I^2 test is with stronger test power than Q test, which is also conducted in this study for heterogeneity test, and the same below. In the Meta-analysis of overall perception, I^2 =0%, so it is included in study with no heterogeneity. Funnel plot is applied in this study to test Publish Bias in order to verify Publication Bias under the circumstances of small number of literatures inclusion, as the Funnel figure, Figure 1 below. It is bilateral symmetry and without dot, indicating no Publish Bias.

To first assumption H1: The overall perception of male subjects' career barriers were lower than that of female subjects, the outcome of Meta-analysis is as in Table 2 below. It shows that three studies out of the four literatures included in Meta-analysis do not support this assumption (Tian, 1998, Zhang, 2005, & Wu, 2008). On the contrary the overall effect value supports the assumption that the overall perception of male subjects' career barriers was lower than that of female subjects, at 0.02 (0.01, 0.04).

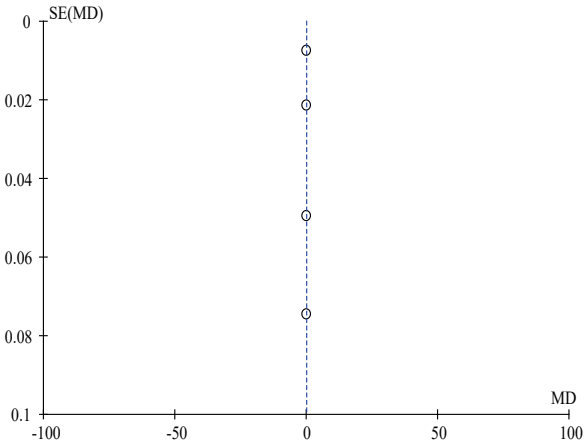

Figure 1
Publication Bias Test of Meta-Analysis of Gender Differences on Overall Perception of Career Barriers

Table 2
Meta-Analysis of Gender Differences on Overall Perception of Career Barriers

Study ID	Experimental			Control			WMD	95%CI
	M	SD	N	M	SD	N		
TIAN Xiulan1998	3.29	1.09	479	3.17	1.06	369	0.12	-0.03,0.27
ZHANG Xiaobo 2005	2.56	0.54	249	2.53	0.60	280	0.03	-0.07,0.13
WU Xuemei 2008	2.34	0.39	925	2.30	0.40	555	0.04	-0.00,0.08
ZHANG Xiaoyan 2009	3.01	0.05	224	2.99	0.10	224	0.02	0.01,0.03
Total(95%CI)			1877			1428	0.02	0.01,0.04

3.2 Meta-Analysis of Gender Differences on Internal Perception of Career Barriers

In the heterogeneity test, I^2 =68%, which indicates the literature included is with moderate heterogeneity, so Radom Effect Model (RE) is adopted to control heterogeneity. As Figure 2 shows there is no publication Bias in the literature included.

In the Figure 2, to second assumption H2: The internal perception of male subjects' career barriers was lower than that of female subjects; the outcome is as in Table 3 below. All four included literatures do not support this assumption, and overall effect value does not support the assumption neither, at -0.01 (-0.07, 0.05).

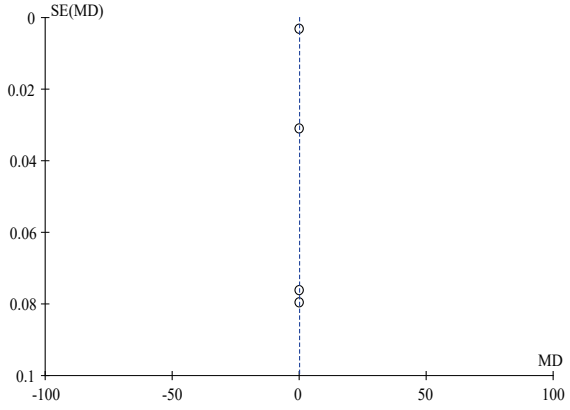

Figure 2
Publication Bias Test of Meta-Analysis of Gender Differences on Internal Perception of Career Barriers

Table 3
Meta-Analysis of Gender Differences on Internal Perception of Career Barriers

Study ID	Experimental			Control			WMD	95%CI
	Mean	SD	Total	N	SD	N		
TIAN Xiulan 1998	3.23	1.16	479	3.25	1.14	369	-0.02	-0.18,0.14
ZHANG Xiaobo 2005	2.67	0.85	249	2.65	0.90	280	0.02	-0.13,0.17
WU Xuemei 2008	2.14	0.57	925	2.10	0.58	555	0.04	-0.02,0.10
ZHANG Xiaoyan 2009	3.03	0.03	224	3.08	0.04	224	-0.05	-0.06,-0.04
Total(95%CI)			1877			1428	-0.01	-0.07,0.05

2.3 Meta-Analysis of Gender Differences on External Perception of Career Barriers

In the heterogeneity test, I^2 =17%, indicating the heterogeneity of included literature is negligible. As shown in Figure 3, there is no publication bias.

In Table 4, it can be concluded that research outcome from two (Tian, 1998, & Zhang, 2009) out of the four included literatures and overall effect value at 0.05 (0.02, 0.08) support the assumption of H3: The External perception of male subjects' career barriers was lower than that of female subjects.

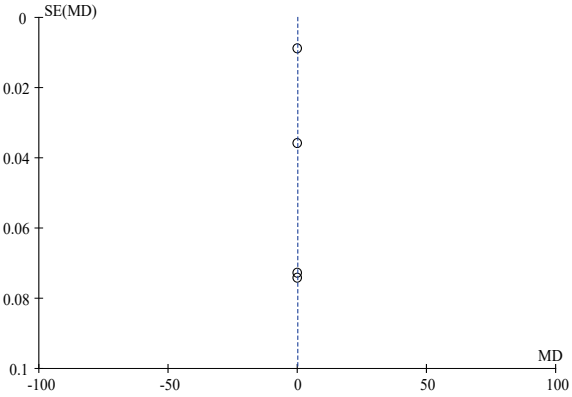

Figure 3
Publication Bias Test of Meta-Analysis of Gender Differences on External Perception of Career Barriers

Table 4
Meta-Analysis of Gender Differences on External Perception of Career Barriers

Study ID	Experimental			Control			WMD	95%CI
	Mean	SD		Mean	SD			
TIAN Xiulan1998	3.42	1.05	479	3.26	1.05	369	0.16	0.02,0.30
ZHANG Xiaobo 2005	1.85	0.76	249	1.82	0.94	280	0.03	-0.12,0.18
WU Xuemei 2008	2.47	0.66	925	2.46	0.67	555	0.01	-0.06,0.08
ZHANG Xiaoyan 2009	3.01	0.06	224	2.96	0.12	224	0.05	0.03,0.07
Total(95%CI)			1877			1428	0.05	0.02,0.08

3. DISCUSSION

There were three assumptions in this study: *H1*: The overall perception of male subjects' career barriers was lower than that of female subjects; *H2*: The internal perception of male subjects' career barriers was lower than that of female subjects; and *H3*: The external perception of male subjects' career barriers was lower than that of female subjects. While H1 and H3 have been confirmed, H2 is not, which is to say that the overall perception and the external perception of male subjects' career barriers were lower than that of female subjects, while the internal perception was no statistical difference between the two genders. It can be inferred then, that the greater career barriers perceived by females are determined largely by external factors. In this study at least, females are self-strengthening, well-prepared for career development, ready to overcome any psychological and physical weakness to achieve occupational success. However, when these women still perceive career barriers due to external factors, it should be noted that although the society is no longer patriarchal, women, comparing with men, are still not with an equal developmental path on career process. Pressure from the society, corporate, and family is more or less still restricting career development of women.

On societal level, gender discrimination and perception, culture, and external attribution are the main influence factors. It is still the social mainstream culture of breadwinning man and homemaking woman. Society considers that determination, decision, and execution are characteristics of man, which is considered as vital for career development. However, if woman has these characteristics, she is accused masculine or gender-neutral. Man with a successful career is praised while in terms of a professionally successful woman, it is more likely to be suspicious and jealous criticizes, or even speculating her success is brought by disgraceful method. In other words, the common view is that male's success is more of personal ability and other personal factors, while female's success is more brought by external factors such as luck, personal appearance, and social background.

On corporate level, the employment discrimination brought by employment cost (especially fertility cost), masculine corporate culture, and Glass Ceiling Effect are the main factors. With the implement of Two-Child Policy, the fertility cost of female employee is higher as time goes by. Led by cost saving oriented, corporate employment preference on employee's gender is obvious, thus it is undisputed that male is a lot easier to be employed than female. Within a corporate, the management is more likely to be male which lead to the fact that the corporate culture is partial to masculinity. In official or unofficial corporate, female is just embellishment to the overwhelming masculine corporate culture. Glass Ceiling Effect refers to the invisible barriers that prevent a female worker to promote from middle-level management to high-level management. Foreign scholar Rudas once proposed a formula to measure Glass Ceiling ratio: (No. of male manager * No. of female normal staff) / (No. of female manager * No. of male normal staff). If the result: 1) equals to 1, meaning there are equal probabilities for males and females to become a manager; 2) less than 1, meaning female is more likely to become a manager than man; 3) greater than 1, meaning female is less likely to become a manager. The author used this formula on some middle schools in Sichuan, Glass Ceiling Effect is ubiquitous.

On family level, it is the conflict between family and career, and also an issue of fertility. Traditionally man is the breadwinner while woman is the homemaker. This is leading to the situation that females are taking more family responsibilities while striving for career, which is also distracting them from concentrating on work. This is not a fair competition from the start. Being as the most import aspect in a family, fertility occupies majority of female's time and efforts, which is also unavoidable and cannot be done perfunctorily. The evaluation of success of a man is more on his career, while for a woman, the standard success is more on family. As a scholar generates, man and woman are like runners in a game, man is with little burden, but woman is carrying kid in one arm, and cookers in another. With all these burdens woman is running as fast as man, but people are still criticizing woman's gesture is not elegant enough.

4. DEFICIENCY AND INTROSPECTION

Based on approximately 300 retrieval articles, in this study there were only four articles met the standard and were included, which no doubt devalued Meta-analysis. In the process of document retrieval and inclusion, there are issues of unclear subject heading definition, quantity of empirical research being too small, too much redundant

research, and insufficient statistical data, which all caused the consequence of low number of literature included. This can also be the reason of study on career barriers being immature and limited.

Furthermore, although supported by dissertations, this study lacks research on drawer literature. The fact of difficulties on drawer literature research, and positive result being easier to publish, are inevitable obstacles to overcome. However, scholars are still confused on whether it is true that there are this many positive research results in social science, which is also a dilemma in study.

There was no clear distinction between internal and external factors of career barriers from the four literatures included. This study divides internal and external factors based on the authors' definition on individual factors from the four literatures included respectively, the complete clarity and accuracy is unknown.

There was no further study on the potential different research result brought by subjects' group characteristics, which could be the observation variables to examine the impact of further factors for follow-up studies.

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