

Self-efficacy towards Career Satisfaction among Female Engineers

Ainul Syakira binti Mahidi @ Mohyedin and Rabeatul Husna Abdull Rahman
Faculty of Management Universiti Teknologi Malaysia

Abstract This conceptual paper reviews the influence of self-efficacy towards career satisfaction among female engineers. It reviews the basis from Bandura (1977)'s social cognitive theory – that, with self-efficacy, one can achieve what one sets out to do. Self-efficacy has the capability to influence an individual's belief regarding his or her ability to successfully complete tasks necessary to making career decisions. In the case of female engineers, working in a male-dominated profession, self-efficacy plays an important role on female's career satisfaction. The purpose of this conceptual paper is to understand the role of self-efficacy on female employees' career satisfaction.

Keywords: self-efficacy, career satisfaction, subjective career success and female engineers.

1. Introduction

Malaysia has the highest number of female participation in the workforce, up to 40 percent compared to other ASEAN countries. However, the female in the engineering field is considered very low (The Star Online, March 2013). According to ACCA-TalentCorp report of Retaining Female in the Workforce (2013), the labour force participation rate among female remains low at 46 percent compared to ASEAN countries like Singapore (60 percent) and Thailand (70 percent). Malaysian female's participation in the workforce, even though is lower than other countries with similar income levels has increased from 44.7 percent in 1995 to 47.3 percent in 2004 (UNICEF Malaysia, 2005). This number signifies very little difference in female participation within 10 years. To improve this condition, the government has shown commitment and dedication in many of its programs and policies in the last two decades. The Government of Malaysia has formulated the National Policy on Female and also established the Ministry of Female and Family Development in 2011 with a mandate to address issues on female and uplift the stature of female in the country.

Zeldin, et. al (2008) mentioned that self-efficacy was initially brought to the career literature to explain the underrepresentation of female in traditionally male college courses, majors, and careers, including those in science, technology, mathematics, and engineering. Researchers have demonstrated that the lack of participation by female in male-dominated careers may have been due in part to their low mathematics and science self-efficacy. Self-efficacy theory suggests that increasing the self-efficacy of employees will boost motivation and performance. This basic idea behind this theory is that motivation and performance are determined by how successful people believe they can be (Bandura, 1982). Self-efficacy beliefs also play a mediational role in that they serve as filters between prior achievements or abilities and subsequent behavior. Moreover, self-efficacy could enhance the impact of other determinants of career success by way of moderation (Ballout, 2009). Betz and Hackett (1997) suggest that

differential background experiences associated with gender role socialization might have led to gender differences in self-efficacy and confidence with respect to specific domains of career behavior. Organizational scholars have recommended that self-efficacy is an important motivational and social cognitive predictor of career success. Studies examining self-efficacy have found it to be a major construct that may help explain and predict motivation and performance and to influence career success (Stajkovic & Luthans, 1998; Day & Allen, 2004). Employees who exhibit high career self-efficacy would increase their commitment to attain successfully career success as opposed to those who are less successful and less committed (Ballout, 2009).

There are two types of career success that is widely discussed in the literature which are the objective career success and subjective career success. A lot of researches mainly focused on the subjective career success and not many has been discussing about the objective career success. According to Greenhaus (2002), the shift away from the organizationally defined careers to the individually defined careers has highlighted the importance of the subjective aspects of career that refer to the individuals' own perceptions and interpretations of their own career situations. Most previous studies have consistently suggested that career success (objective) and non-organizational success (subjective) are inter-related, and then formed a basic assumption that a successful individual considers himself/herself to have succeeded in both areas (Baruch, 1998). Furthermore, Judge et.al (1995), Seibert et. al (1999), Judge et. al (2004) and Ng et. al (2005) found that objective career success will positively predict subjective career success.

Female may go through numerous cycles as they seek to create careers that satisfy their own personal needs and definition of success (Valcour & Ladge, 2008). As opposed to men, female's definitions of career success often focus on subjective rather than just objective outcomes because they generally have more non-work responsibilities than men, making it difficult to adhere to the norms of the workplace. Female engineers' participation in the field of engineering is very low. As such the seniors who can be the mentor and guides new female engineer is not many. Female are typically viewed as 'honorary men' or 'flawed female' for trying to inVol.ve in fields that are usually dominated by men (Powell et. al, 2006). According to Powell et. al (2006), if the female is an efficient, competent manager, she is likely to be judged unfeminine, but if she demonstrates the supposedly female qualities of care and sensitivity she is likely to be assessed either as an inappropriate and inefficient manager or as a good female manager. Various research studies indicate those females who seek jobs in a male dominated culture of profession are likely to act the same as men in order to be successful.

Research on the work experiences of female indicates that professional female experience a gender gap in wages, and the lack of corporate policies on child-care issues. It is stated that the female role reinforces many behaviors contradictory to those defined as managerial; men are raised to be aggressive and independent, while female are raised to be social and receptive (Igbaria et. al, 1999). According to Wahat (2011), female much more than men, is subjected to a range of controls over the way they look, behave, dress, talk, or choose to lead their lives. Clearly, female still occupy a secondary position in society. Female tend to draw back from using technical devices and from trying to understand the behind of the operational principles. Furthermore lack of encouragement from the family and society leads to the lack of interest for female to pursue their career (Wahat, 2011).

Although both objective and subjective career success appear to be inter-related, objective career success is seen as having an influential role towards subjective career success and not vice versa. In regards to female employees, subjective career success is found to be more significant than objective career success. Since objective career success is normally measured in terms of salary, age and position of an employee, they are considered as uncontrollable factors. On contrary, subjective career success is relative to an employee's interpretation and definition and thus is seen as more dynamic and varied compared to objective career success. This highlights the significance of investigating subjective career success over objective career success.

2. Literature Review

Self-efficacy is the result of interactions between the outside environment and other self-adjustment mechanisms and personal capabilities, experience and achievements. Furthermore, self-efficacy is a critical factor for the change of behavior, and is a part of self-control. It is also a kind of motive recognition mechanism (Niu, 2010). In this study, self-efficacy is defined as employees' feelings of confidence in solving problems, in facing political issues in the organization, their motivations to accomplish the goals and work, as well as learning new skills. Career satisfaction takes an individualistic approach. This paper conceptualize subjective career success as how satisfied female employees are as well as their feelings of accomplishment towards their capability to achieve success in their career, the progress they have made towards meeting their career, income and advancement of goals and new skills.

Self-Efficacy

The concept of self-efficacy is derived from the social cognitive theory, which states that human functioning is a result of interplay between personal, behavioral, and environmental influences (Bandura, 1986; Zeldin & Pajares, 2002). Social cognitive theory argues for the importance of human agency, viewing an individual as being influential in his or her own development. In keeping with this view, an individual is able to exercise control over his or her own thoughts, feelings, and actions, and this control is heavily influenced by an individual's view of self.

According to Maddux (2000), "Self-efficacy is not perceived skill; it is what I believe I can do with my skills under certain conditions. It is not concerned with by beliefs about my ability to perform specific and trivial motor acts, but with my beliefs about my ability to coordinate and orchestrate skills and abilities in changing and challenging situations." The basic premise of self – efficacy theory is that "people's beliefs in their capabilities to produce desired effects by their own" (Bandura, 1997). It is the most important determinant of behaviour that people choose to engage in and how much they persevere in their efforts in facing obstacles and challenges. Self - efficacy is developed through time and experience that will continue through out the life of a person.

Self-efficacy influenced three major outcomes or criterion behaviors which are (1) approach versus avoidance as "approach" is often conceptualized as "choice" in vocational or career behavior parlance, (2) level of performance, and (3) persistence (Betz, 2007). Low self-efficacy expectations regarding a behavior or behavioral domain lead to avoidance of those behaviors, poorer performance, and a tendency to give up at the first sign of difficulty. In the

context of career development, “approach” behavior often refers to an individual’s willingness to choose, or even consider, a given career option.

People form their self-efficacy perceptions by interpreting information from four sources: (1) authentic mastery experiences, (2) vicarious experiences, (3) social persuasions, and (4) physiological indexes (Bandura, 1997). According to Zeldin et. al (2008), Bandura theorized that the most influential source of information comes from the interpreted results of past performance, which he called mastery experiences. These past performance accomplishments can create a strong sense of efficacy to accomplish similar tasks in the future. Alternatively, repeated failure can lower efficacy perceptions, especially when such failures occur early in the course of events and cannot be attributed to lack of effort or external circumstances. The second source of self-efficacy information is the vicarious experience gained by observing others performing tasks. By observing the successes and failures of others, people gather information that contributes to their judgments about their own capabilities. Social or verbal persuasions messages from others about one’s ability to accomplish a task are hypothesized to exert the most positive influence on those who already have a strong sense of self-efficacy. Social messages can encourage people to exert the extra effort to succeed, resulting in further development of skills and personal efficacy. People look to their physical and emotional states as a fourth source of information about their capabilities. Powerful emotional arousal, such as anxiety, can effectively alter individuals’ beliefs about their capabilities. People may view a state of arousal as an energizing factor that can contribute to a successful performance, or they may view arousal as completely disabling. Thus, individuals construct their self-efficacy beliefs through the interpretation and integration of information from these four sources.

Subjective Career Success

Subjectively, a career is the moving perspective in which the person sees his life as a whole and interprets the meanings of his various attribute, actions and the things which happen to him. Career success was defined by Judge *et. al* (2010), as the positive psychological outcomes or achievement one has accumulated as a result of experiences over the span of working life. Career success research increasingly assesses both objective and subjective career outcomes, apparently presuming that people define their career success unanimously (i.e, current salary, promotions and job satisfaction). Career success potentially means much more to people engaged in a career than has typically been measured by empirical research (Heslin, 2005).

Subjective career success refers to an employee’s evaluation of his/her own career success with reference to self defined standards, age (career stage), aspirations and opinions of significant others. Intrinsic is only experienced directly by the person engaged in her or his career. Subjective career success was measured by an individual’s intrinsic feelings over what constitutes career accomplishment. Subjective career measures such as career satisfaction, self-awareness and adaptability, and learning, essentially individual-level factors, rather than organizational-level factors, have taken on greater salience in today’s environment.

Subjective career success is also defined as an individual’s reaction to the career experiences that happen directly or indirectly (Supa`ad et, al, 2013). The outcome of this can be assessed through personal standards of self-reference criteria or standards or achievement while others’ criteria are used as a reference (Heslin, 2005). As such it is related with the confidence, resourcefulness, coping abilities, experience, independent of the individual itself in determining their successfulness in the workplace.

Traditional career research was consistent with hierarchical, position-oriented organizations in which promotions, income differentials, rank, and job retention were relevant to 'captive' individuals as they navigated their careers. In contrast, in a turbulent environmental context, characterized by technological advances, globalization, and other complex factors, individuals are less dependent on organizational career arrangements. Instead, individuals experience more career transitions, have greater agency in career decisions, and must be adaptable and able learners (e.g, Hall, 2002). Consequently, subjective career measures such as job satisfaction, self-awareness and adaptability, and learning, essentially individual-level factors, rather than organizational-level factors, have taken on greater salience in today's environment.

In this review, subjective career success refers to how satisfied female employees are as well as their feelings of accomplishment towards their capability to achieve success in their career, the progress they have made towards meeting their career, income and advancement of goals and new skills.

Relationship between Self-efficacy and Subjective Career Success

Ballout (2009) has done a research investigating the role of self-efficacy as the moderator for the relationship between career commitment and career success. The results showed that career commitment predicted both objective (i.e. salary level) and subjective career success (i.e. career satisfaction) only for employees with average to high self-efficacy but not for those with low self-efficacy. He is the first researcher to examine the moderating effect of self-efficacy on the relationships between these important career concepts. He also mentioned that individuals with high self-efficacy beliefs set higher career goals, put in more effort, and pursue career strategies that lead to the achievement of those goals.

As Zeldin & Pajares (2000) have suggested, female's sense of confidence may be especially affected by the encouragement or discouragement received from people they deem important in their lives. An analysis of 15 narratives revealed that verbal persuasions and vicarious experiences were critical sources of the female's self-efficacy beliefs. These findings suggest that the perceived importance of these sources of self-efficacy beliefs may be stronger for female in male-oriented domains than for individuals operating in traditional settings.

Coping self-efficacy, or an individual's beliefs about their ability to deal with career barriers, has also been shown to be related to having greater goals related to academics and their careers (Lent, Brown, Schmidt, et al, 2003; Lent, Brown, Sheu, et al, 2003). According to Bandura (1977), the stronger an individual perceived self-efficacy, the more active their coping efforts in the face of obstacles and aversive experiences.

Moreover, individuals often experience success or failure in an endeavor while at the same time observing others engaging in the same activity. It is also possible, if not likely, for an individual to receive feedback that constitutes social persuasion and to experience physiological and affective states during and after an experience which will be integrated into future self-efficacy beliefs. It is this cognitive processing and integration of information from multiple sources that determines an individual's self-efficacy beliefs (Zeldin et.al, 2008).

The concept of personal efficacy can be considered to have broad and significant implications for both career theory and career counseling (Betz, 2000). Betz & Hackett (2006) both realized the huge relevance of self-efficacy theory to the understanding of the career

development of female in general and to female's underrepresentation in scientific and technical careers in particular. In sum, self-efficacy theory presented a way to understand and integrate a host of factors known to influence female's career choices, thereafter affecting their subjective career success.

3. Conceptual Framework

Based on the above reviews, the following conceptual framework has been developed.

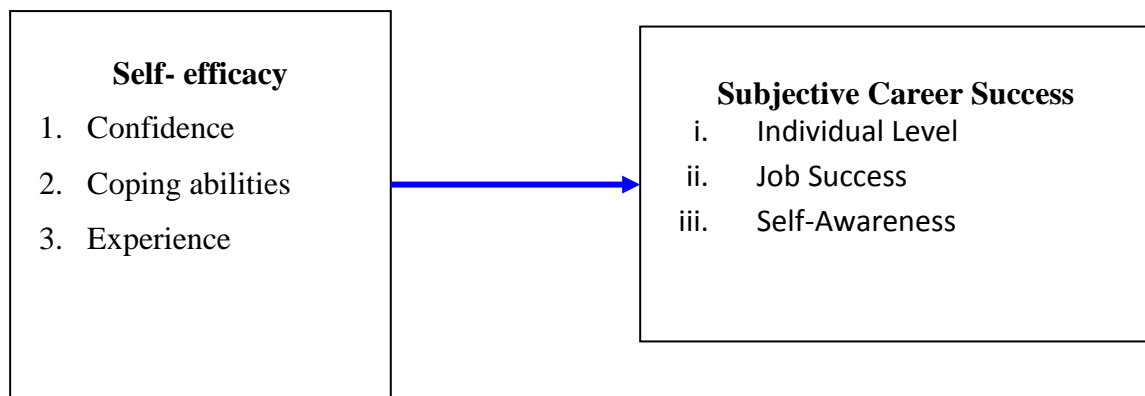


Fig. 1 - Conceptual Framework

4. Conclusion

This paper has reviewed the concept of self-efficacy and its relationship with employees' perceived career success. It briefly highlights the lower participation rate of female workforce compared to male workforce. Although various initiatives have been employed by the Malaysian government, the number of female participation is still considered lower compared to other ASEAN countries, and with small improvement from 1995. In the case of female engineers, working in a male-dominated profession, such as the oil and gas industry, self-efficacy plays an even important role towards their perception of career success. This study hypothesizes that female engineer who possesses high confidence, coping abilities and have varied experienced are more likely to achieve their subjective career success i.e. their feeling of accomplishment and satisfaction towards their career, income, advancement etc.

Acknowledgement

The authors would like to thank Ministry of Education, Universiti Teknologi Malaysia and Vote No. (00K98) for supporting and sponsoring this publication.

5. References

ACCA-TalentCorp Report.Retaining Women in the Workforce. (2013).[Online] Available : <http://www.talentcorp.com.my/wp-content/themes/agenda/ACCA-50-Champions.pdf>(September 6, 2014)

- Ballout, H. I. (2009). Career commitment and career success: moderating role of self-efficacy. *Career Development International*, Vol. 14 (No. 7), 655-670.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Baruch, Y. (1998), "The rise and fall of organizational commitment", *Human Systems Management*, Vol. 17 No. 2, 135-43.
- Betz, N. E. (2000). Self-Efficacy Theory as a Basis for Career Assessment. *Journal of Career Assessment*, Vol. 8(3), 205-222.
- Betz, N. E., & Hackett, G. (1997). Applications of Self-Efficacy Theory to the Career Assessment of Women. *Journal of Career Assessment*, Vol.. 5(4), 383-402.
- Betz, N. E., & Hackett, G. (2006). Career Self-Efficacy Theory: Back to the Future. *Journal of Career Assessment*, Vol. 14(3).
- Day, R. and Allen, T. (2004), "The Relationship between Career Motivation And Self-Efficacy With Protege Career Success", *Journal of Vocational Behavior*, Vol.. 64, pp. 72-91.
- Heslin, P.A. (2005), "Experiencing Career Success", *Organizational Dynamics*, Vol. 34(4), 376-90
- Johari, H., Mat, N., Mat, N., Othman, S. N., & Mohamed, A. H. (2013). Exploring Career Success Among Women Engineers: The Malaysian Case. *International Journal of Education and Research*, Vol. 1(11), 1-8.
- Jothiratnam. (2005). Women's Participation In The Workforce Increasing. [Online] Available :http://www.unicef.org/malaysia/sowc_6068.html. (October 16, 2014)
- Judge, T. A., Klinger, R. L., & Simon, L. S. (2010). Time Is on My Side: Time, General Mental Ability, Human Capital, and Extrinsic Career Success. *Journal of Applied Psychology*, Vol. 95(1), 92-107.
- Ng, T. W. H., Eby, L. T., Sorensen, K. L., & Feldman, D. C. (2005). Predictors of Objective and Subjective Career Success: A Meta-Analysis. *Personnel Psychology*, Vol. 58, 367-408.
- Niu, H. J. (2010). Investigating the effects of self-efficacy on foodservice industry employees' career commitment. *International Journal of Hospitality Management*, Vol. 29, 743-750.
- Powell, A., Bagilhole, B., & Dainty, A. (2006). How Women Engineers 'Do' and 'Un-do' Gender : Consequences for Gender Equality. *Gender, Work and Organization*.
- Rancangan Malaysia ke- 10. (2010).[Online] Available : http://www.pmo.gov.my/dokumenattached/RMK/RMK10_Mds.pdf(October 15, 2014)
- Seibert, S. E., Kraimer, M. L., & Liden, R. C. (2001). A Social Capital Theory Of Career Success. *Academy Of Management Journal*, Vol. 44(2), 219-237.
- Stajkovic, A. D., & Luthans, F. (1988). Self-efficacy and work-related performance: A meta-analysis. *Psychological Bulletin*, Vol. 124(2), 240-261.
- Supa`ad, M., Wahat, N. W. A., Fakhrudin, F. M., & Suandi, T. (2013). Factors Contributing to the Subjective Career Success among Islamic Educators in Primary Schools. *International Journal of Education & Literacy Studies*, Vol. 1(1), 55-60.
- Valcour, P.M. and Ladge, J.J. (2008), "Family and career path characteristics as predictors of women's career success outcomes", *Journal of Vocational Behavior*, Vol.. 73(2), 300-9.
- Wahat, N. W. A. (2011). Towards Developing a Theoretical Framework on Career Success of People with Disabilities. *Asian Social Science*, Vol. 7(3), 62-70.

-
- Xu, H., & Tracey, T. J. G. (2014). Ambiguity Tolerance With Career Indecision: An Examination of the Mediation Effect of Career Decision Making Self-Efficacy. *Journal of Career Assessment*, 1-14.
- Zeldin, A. L., & Pajares, F. (2000). Against the Odds: Self-Efficacy Beliefs of Women in Mathematical, Scientific, and Technological Careers. *American Educational Research Journal*, Vol. 37(1), 215-246.
- Zeldin, A. L., Britner, S. L., & Pajares, F. (2008). A Comparative Study of the Self-Efficacy Beliefs of Successful Men and Women in Mathematics, Science, and Technology Careers. *Journal Of Research In Science Teaching*, Vol. 45(9), 1036–1058.