UNIVERSITI TEKNOLOGI MARA

CONFERENCE PROCEEDING

ICITSBE 2012

1ST INTERNATIONAL CONFERENCE ON INNOVATION AND TECHNOLOGY FOR SUSTAINABLE BUILT ENVIRONMENT

16 -17 April 2012

Organized by:
Office of Research and Industrial
Community And Alumni Networking
Universiti Teknologi MARA (Perak) Malaysia
www.perak.uitm.edu.my

PAPER CODE: CT 22

PERSONAL COMPETENCY OF WOMEN PROJECT MANAGERS.

Mastura Jaafar and Liyana Othman
School of Housing Building and Planning,
Universiti Sains Malaysia,Penang, Malaysia

Abstract
Women have been underrepresented in construction industry worldwide. While there are many studies done in different countries on women in construction industry, but it is interesting to note that the similar study has attracted very minimal attention in Malaysia. Studies on women involvement in the industry is rather limited. Thus, the aim of the research is to assess the personal competency level of women project managers in Malaysian Construction Industry. This study used stratified random sampling design on the listed Grade 7 Contractor companies in Peninsular Malaysia. A Survey survey approach was used to collect data from on 15 women project managers in Peninsular Malaysia. The results reveals that experience is the first criterion been used in selecting women project manager while the three main personal competencies owned by them are honesty and integrity, alertness and quickness and effective decision making.

Keywords: Competency, women project manager and construction industry.

1. Introduction

The percentage of female employment in Peninsular Malaysia has increased to 44.0 percent in 2008 from 30.8 percent in 1957 (Department of Statistic Malaysia, 2007). Even there are imbalance figures on women in different management level, but there are an increasing number of employed females in professional group by 7.1% in 2007 from 3.79 million, 8.3% in 2009 from 3.94 million and 8.3% from 4.02 million employed women. However, according to Tan, (1991) and Yousof, (1995), women are generally represented in the lower management level compared to top management level.

Traditionally, construction industry is known as demonstrably male dominated economic activity (Gale, 1991, 1992; Gale and Cartwright, 1995). Gale and Cartwright (1995) use keywords such as crisis, aggression and conflict, gallant behaviour and traditional attitudes to explain the macho culture of the industry that is related to male domination. Ginige, Amaratunga and Haigh (2007) support the above scenario by quoting that one of the highest male dominated industries in the world is the construction industry. In UK, construction industry is associated with 84 percent male workers (Fielden, Davidson, Gale and Davey, 2001).

Additionally, construction workplace is well known for involving travelling to geographically diverse locations, long work hours, and has high level of stress (Dainty and Lingard, 2006). Construction industry has been acknowledged to fails to appreciate issues which are associated with combining work and family commitment (Fielden et al., 2000). Many construction professional experiences higher conflict to keep a balance between work and family issues compared to men (Shanmugam et al., 2007). In most cases, women still carry the primary responsibility for domestic duties in most households, thus, males are most likely selected for a construction work (Higgin et al., 2000). As a result, women are underrepresented in the construction industry (Arditi and Balci, 2009; Dainty et al, 2000; Fielden et al., 2001; Byrne et al., 2005).

According to Duong and Skitmore (2003), there are fewer women than men in managerial positions. Consequently, there is little evidence that look into skills and abilities possessed by women in managerial jobs According to a research finding from the University of California, it has stated that: *"When it comes to the best managerial skills, women may have advantages over men"* (2000, p. 39). For example Mui and Mulenburg (2004) find that women have stronger communication, empathy, and better response to stress skills than men. Besides, in Arditi and Balci's (2009) study, women and men appear to have the same level of strength in managerial competencies and it shows that women are as competent as men for holding project manager positions in private construction companies in United States.

Literature from all over the world shows that there have been many studies conducted on women in construction industry and in various areas such as careers and barriers of women (Worall et al., 2010) and on mixed women

industry professionals such as architects, project managers, senior managers, quantity surveyors, engineers and etc., (Greed, 2000; Watts, 2009; Watts, 2007; Arditi and Balci, 2009 and Duong and Skitmore 2003). However it is interesting to note that a study on women in Malaysian Construction Industry has attracted very minimal attention. According to Maimunah (2001), there was a moderate amount of research on Malaysian women since 1970s, and it was scattered in various fields such as Sociology and Anthropology, Education, Extension Education and Community Development, Rural Development, Law and Politics. Besides that, there were only a few studies conducted on women in management in Malaysia such as Koshal et al., (1998), Omar and Davidson (2004), Yousof (1995) and Tan (1991). This study will fill the knowledge gap by looking into women competencies of project managers in contractor's firms as an important entity of private sector. The aim of the research is to assess the personal competency level of women project managers in Malaysia Construction Industry

2. Competency and project manager

A good project manager must be familiar with a large number of disciplines and techniques because most of the projects have their own technical, financial, marketing and organisational aspects that inevitably derail the best (Shtub et al., 1994). Yet, project managers are selected through appropriate competencies (Turner and Müller, 2006; Müller and Turner, 2007). Competencies can represent a range of different characteristics, behaviours and traits that are required for effective job performance (Abraham, Karns, Shaw and Mena, 2001). A project manager's competency is a key factor influencing project outcome (Stevenson and Starkweather, 2010) and is defined as one of the project critical success factors (Sayles and Chandler, 1971).

Mirabile (1997) defined *"competency is a knowledge, skill, ability or characteristic associated with high performance on a job, such as problems solving, analytical thinking, or leadership"*. Competencies represent a range of different characteristics, behaviours and traits that are required for effective job performance (Abraham et al., 2001). Personal competence is the individual characteristics or personality that people bring to their work roles and typically used in performance management process, selection and performance (Armstrong, 1996). The attributes and traits for project managers are 1) honesty and integrity, 2) alertness and quickness, 3) energy and toughness, 4) decision-making abilities and 5) self-confidence.

2.1 Honesty and integrity

Dainty, Cheng and Moore, (2003) have underlined that the word honesty is defined as being honest with both client and project team; and the word integrity refers to keeping promises and adhering to agreed actions. According to Dainty et al. (2005), honesty and integrity is important for project managers in terms of the management of internal team relation and externally to the client and other project stakeholders. The project manager must show honesty and integrity to promote an atmosphere of trust such as they should not make impossible promises (Kerzner, 2009).

2.2 Alertness and quickness

The project manager must be alert and quick in their abilities to perceive warning signals that can eventually lead to serious problems (Kerzner, 2009). Knowing that construction project is multidisciplinary (Shohet and Frydman, 2003), thus, the hectic atmosphere of projects needs the project manager to direct the great variety of changes so that they result in movement to achieve project objectives and not random unproductive motions (Martin, 1976).

2.3 Energy and toughness

Key word of energy and toughness has been used by Martin (1976) and Kerzner (2009) to demonstrate the working environment of male-dominated discipline. Project management is a demanding business and is particularly stringent that can be brutal in its physical and mental demands on the project manager (Martin, 1976). The project manager should possess mental toughness in management (Blokdijk, 2007) because the project manager has to deal with a large number of interpersonal relationships and must be available to many people, alone and in combination, thus all problems seem to demand immediate attention (Martin, 1976)

2.4 Decision-making

Bedein (1986) has defined decision making as the act of choosing between two or more alternatives by selecting the one judged best. In projects, things are too new and change too fast and involve so many improbable

combinations of people and organizations (Martin, 1976), thus, project managers will inevitably face numerous problems throughout the project's life. Therefore, it is important that the project managers gather information about the problem with the intention to understand the issue as clearly as possible (Harris, 2007).

2.5 Self-Confidence

To be effective, the project manager must be enthusiastic and strong-minded, thus bring self-confidence and a willingness to lead by taking a stand (Burnett, 1998). Effective leaders have a belief in their own abilities (Turner and Simister, 2000b), thus to do this, he or she needs to have a broad range of skills and tools to deal effectively with the complexities of project management (Burnett, 1998). A project manager must be confident of his own ability, which is normally associated well with experience (Pheng and Chuan, 2006).

3. Methodology

3.1 Questionnaire Design

This paper is part of larger study about women project manager in the construction industry. The first part was about the demographic data of respondents which consists of four questions which are age, status, highest educational qualification and area specialization, working experience in Construction Industry and becoming a Project Manager.
In terms of personal competencies of project manager, this study used five categories of measures that were honesty and integrity, alertness and quickness, energy and toughness, decision-making and self confidence. This study had done a pilot study that was carried out on six respondents who are involved in construction industry. To increase validity and reliability, this study conducted a pilot survey to pre-test our questionnaire.

3.2 Sampling design

The sampling design used was stratified random sampling design. In October 2010, the researcher had started to call all the listed Grade 7 Contractor companies in Peninsular Malaysia to find women Project Managers as respondents. This is due to no statistical data and official information about women Project Managers in Malaysian Construction Industry (MCI). As a result, 1205 Grade 7 Contractor companies around Peninsular Malaysia have been called. From 1205 companies, only 574 Grade 7 Contractor companies could get through, and from that figure, only 48 companies have women project managers. Thus, the ratio of women Project Managers to Grade 7 Contractor companies in Peninsular Malaysia is 1: 12.

4. Analysis

4.1 Demographic Data

The majority of the respondents are 25-35 years of age (40%), followed by 36-45 years (33.3%), then 46-55 years old (26.7%). The oldest respondent is 54 years old; the youngest respondent is 27 years old. Most of the respondents are married (66.7%). Only 20% respondents are single and 13.3% respondents are divorced or widowed. The majority of the respondents are degree holders (66.7%), followed by diploma holders (20%). Then, master holders are only 13.3%. In most cases, each respondent has more than one area of specialisation. The majority of the respondents (36%) have engineering specialisation, followed by planning (20%) and project management (20%), while 16% of respondents have specialisation in architecture. Interestingly, only one of the respondents has knowledge and specialisation in nearly all professional areas such as architecture, planning, project management, quantity surveying including accounting except engineering.

A majority of the respondents had experience within 1 to 5 years (26.7%) and 6 to 10 years (26.7%). The percentage of women's involvement is getting smaller as the years increase. The maximum working experience in Malaysian construction industry is 30 years while the minimum is 3 years. The average working experience in the Malaysian Construction Industry of the respondents is 1-15 years. Most of the respondents (73.33%) have working experience as project manager within 1 to 5 years. The maximum working experience as project manager is 20 years while the minimum is 2 years working experience. Most of the respondents (73.33%) have working experience within 1 to 5 years. The maximum years of experience before attaining Project Manager position is 15 years while the minimum is 1 year of experience. Most of them have experienced participating in more than one type of project before becoming a project manager. Most of them (37.8%) were involved in non-residential construction projects, follow by residential (29.7%), infrastructure (16.2%), industrial (8.1%) and special projects (8.1%). Before becoming a project manager, respondents have experience being

involved in different categories of project sizes. Most of the respondents (56%) have major experience participating in large project size, follow by medium project size (29.3%), and small project size (14.6%).

4.1.1 Personal Competencies

Table 1 below shows four personal competencies that are continuously analysed. For honesty and integrity attributes, most of the respondents have demonstrated their qualities through keeping promises as they made it (mean rank= 2.23), followed by admitting their mistakes (mean rank= 1.90) and that all parties have trust in their capabilities (mean rank= 1.87). For alertness and quickness attributes, most of the respondents have displayed their qualities by being aware or alert when problems or conflicts arise (mean rank: 1.53) and making quick alternatives to solve the project problems (mean rank= 1.47).

For decision making items, most of the respondents have exhibited their attributes through getting good feedback from project members regarding their decisions (mean rank= 2.13), using the right alternatives to reach project goals (mean rank= 2.03) and make fast and right decisions (mean rank= 1.83). Self confidence of most of the respondents were shown through not feeling nervous when communicating with all parties (mean rank= 1.53) and when handling projects (mean rank= 1.47). In terms of energy and toughness attributes, most of the respondents have shown this quality through controlling their stress of work (mean rank: 2.83) compared to having a very tight schedule (mean rank= 1.60) and working long hours (mean rank= 1.57).

Table 1: Non-Parametric test for personal competencies of respondents

Personal Attributes/Personality Traits	Rank	Mean rank
1. Honesty and Integrity (*Chi-Square: 2.960; Asymp. Sig: 0.228)*		
- Keep the promise	1	2.23
- Admit the mistake	2	1.90
- All parties trust their capabilities	3	1.87
2. Alertness and Quickness *(Chi-Square: 0.200; Asymp. Sig.: 0.655)*		
- Alert when problems/conflicts arise	1	1.53
- Make quick alternatives to solve the project problems	2	1.47
3. Decision-making *(Chi-Square: 3.500; Asymp. Sig.: 0.174)*		
- Decisions get good feedback from project members	1	2.13
- Use the right alternatives to reach project goals	2	2.03
- Make fast and right decisions	3	1.83
4. Self-Confidence *(Chi-Square: 0.200; Asymp. Sig.: 0.655)*		
- Do not feel nervous when communicating with all parties	1	1.53
- Do not feel nervous handling the project	2	1.47
5. Energy and Toughness *(Chi-Square: 21.814; Asymp. Sig.: 0.000)*		
- Not stressed with work	1	2.83
- Schedule very tight	2	1.60
- Work long hours	3	1.57

Note: Ranking from 1= always to 5= never

5. Discussion

From the analysis results, most of the respondents who had answered the postal questionnaires were aged between 25 to 35 years (40%). It was in contrast to Ogunlana et al., (2002) which noted that the age group of 35 to 45 years is the highest age, then followed by 25 to 35 years and above 45 years. Besides, according to the study's results, most of the respondents (66.7%) were married. This result is supported by Ogunlana et al.'s (2002) study, in which the perception that a married person is more mature and has a more stable personality compared to a single person. However, Ogunlana et al. (2002) also noted that marital status is not a very important factor for selection of project managers.

For educational level, a majority of the respondents were degree holders (66.7%). It is supported by scholars such as Edum-Fotwe and McCaffer (2000) and Ogunlana et al., (2002) who mentioned the importance of project managers to have degrees. Brown et al. (2007) also supports the issue of education qualification by noting that without education, it will reduce the potential for successful performance. However, most of the respondents have stated that level of education as the least important criteria or factor in selection as project manager. This is because the main factors are experience, skills and personal attributes rather than education.

A majority of the respondents (73.4%) have experience within 1 to 15 years in construction industry. It is in contrast to Hyväri (2006) which has noted that a majority of the project managers have 19 years experience in the industry. Besides, most of the respondents (73.3%) have experience as project managers within 1 to 5 years. It is also opposed by Hyväri's (2006) study that a majority of the respondents have 12 years of experience as project manager or project team member in five industry sectors that practice project management including construction. Construction industry in Malaysia is growing and there is a need to have more contractor project managers in the industry. For those who have minimum experience but capable in managing projects can also be promoted as project manager.

According to analysis results, honesty and integrity have been ranked as the first ranking compared to other variables. Then, followed by alertness and quickness, decision making, self-confidence and lastly is energy and toughness. The importance of honesty and integrity attributes is supported by Kerzner (2009), Martin (1976), Dainty et al., (2003), Cleland and Ireland (2004), Dainty et al. (2005) and Wong et al. (2008). The main point of having honesty and integrity attributes is to promote an atmosphere of trust which could help to close the difference, and promote the strength of project members. This statement is supported by Kernzer (2009) and Wong et al. (2008). Trust has been recognised as the most important behaviour factor in managing relationship among contracting parties (Wong et al., 2008).

According to Wong et al. (2008), trust is a significant lead to project success. Besides, it is important for project managers to keep the promises that he or she had made, to ensure the trustful environment. There are a few scholars who mentioned about this matter. They are Dainty et al. (2003), Kerzner (2009) and Cleland and Ireland (2004).

For alertness and quickness attributes, results have shown to be in second ranking. The significant need to have alertness and quickness attributes is agreed by Kerzner (2009), and (Shtub et al., 1994). Decision making has taken place as the third attribute that is exhibited by most of the respondents. However, the importance of decision making ability has been stated by Martin (1976), Ogunlana et al. (2002), Blokdijk (2007), Dainty et al. (2005) and Love and Irani (2003). According to the study's results, most of the respondents received good feedback from other parties regarding their decisions. This result is supported by Dainty et al. (2005) that noted the project manager's ability in decision making is the ability to picture, analyse and reason in order to make appropriate decisions.

For self-confidence issue, most of the respondents have demonstrated their confidence as fourth ranking personal attributes. Referring to the study's results, most of the respondents were confident when communicating or dealing with all parties and handling the projects. The importance of self-confidence of project managers has been noted by Burnett (1998), Turner and Simister (2000b), Lee-Kelley et al. (2003) and Pheng and Chuan (2006).

The issue of women professionals having lack of confidence that was noted by Riger and Galligan (1980) and Shanmugan et al. (2007) can be opposed. Besides, self- confidence leads to project success which is also associated with experience (Lee-Kelley et al. 2003; Pheng and Chuan, 2006). Additionally, there is significance between project manager's experience and project success (Lee-Kelley et al. 2003; Prabhakar, 2005; and Dolfi and Andrews, 2007).

Energy and toughness have taken place in last ranking. The main meaning of these attributes is needing to have the physical stamina and mental toughness while working as project manager to cope with the quantitative and qualitative demands of a project. This statement had been mentioned by Martin (1976). However, it is important to have a mental balance to cope with project needs and have the ability to handle the work stress. This issue has been supported by Blokdijk (2007) and Aitken and Crawford (2007). Besides, the study's results show that the experience in construction industry has helped them to manage their stress level.

6. Conclusion.

According to the results, experience has been stated as the first criterion that is used to select the Project Manager. In Malaysia, it can be concluded that the experience of women Project Managers are adequate because they have been involved in construction industry for about 1 to 10 years and have experience in handling different types of big projects before holding a position as Project Manager.

For academic qualification, the requirement to have qualification, either diploma or degree or other certification in construction related area is suggested as compulsory. It can be concluded that women Project Managers in Malaysian Construction Industry have minimum qualification and most of them are degree holders. Besides, in Malaysia, the program in awarding project manager certificates has just been established in 3 years time. The three main personal competencies owned by women Project Managers are honesty and integrity, alertness and quickness and decision making. The importance of honesty and integrity is to promote an atmosphere of trust to promote the strength of project members. Trust is known as an important behaviour factor in managing relationships among parties and a significant lead to project success. Therefore, it can be concluded

that women Project Managers own the main personal quality which is trust. Women Project Managers have shown their quality as a good manager and leader in promoting a trustful environment.

For alertness and quickness quality, women Project Managers have the ability to perceive warning and alert if problems or conflicts arise and also make quick alternatives to resolve any kind of problems. Therefore, it can be concluded that women project managers have shown the quality and ability to play the main requirement as project managers in managing project challenges. Then, in order to manage project challenges, the decision making ability is required. According to results, it can be concluded that women project managers have the ability to picture and analyse the problem in order to make an appropriate decision. Besides, women project managers show their quality in making decisions for construction projects through good feedback from others.

In terms of self confidence, women Project Managers have belief in they own ability through showing their confidence level when dealing with all parties and handling the construction projects. The importance of self confidence has been defined as key to reach project success. Therefore, it can be concluded that women project managers have great self- belief and have high confidence level. Energy and toughness quality of women Project Managers have been shown through having the mental toughness and the ability to handle and cope with the stressful working environment. Construction industry is known as a stressful workplace. Therefore, it is important for project managers to have very strong mental toughness in order to manage all the project challenges compared to physical strength.

References

Abraham, S. E., Karns, L. A., Shaw, K., & Mena, M. A. (2001). Managerial Competencies and the Managerial Performance Appraisal Process. *Journal of Management Development, 20*(10), 842-852.

Aitken, A., & Crawford, L. (2007). Coping With Stress: Dispositional Coping Strategies of Project Managers. *International Journal of Project Management, 25*(2007), 666-673.

Arditi, D., & Balci, G. (2009). Managerial Competencies of Female and Male Construction Managers. *Journal of Construction Engineering and Management, 135*(11), 1275-1278.

Armstrong, M. (1996). *A Handbook of Personnel Management, 6th edition*. London: Kogan Page.

Bedein, A. G. (1986). *Management*. United States of America: The Dryden Press.

Blokdijk, G. (2007). *Project Management 100 Success Secrets*: Emereo Pty Ltd.

Brown, A. W., Adams, J. D., & Amjad, A. A. (2007). The Relationship Between Human Capital and Time Performance in Project Management: A Path Analysis. *International Journal of Project Management, 25*(2007), 77-89.

Burnett, K. (1998). *The Project Management Paradigm* (Practitioner Series ed.). New York: Springer.

Byrne, J., Clarke, L., & Meer, M. V. D. (2005). Gender and Ethnic Minority Exclusion From Skilled Occupation in Construction: A Western European Comparison. *Construction Management and Economics, 23*(1025-1034), 1025.

Cleland, D. I., & Ireland, L. R. (2004). *Project Manager's Portable Handbook* (2nd ed.). United States of America: McGraw-Hill Professional.

Dainty, A. R. J., Cheng, M.-I., & Moore, D. R. (2003). Redefining Performance Measures for Construction Project Managers: An Empirical Evaluation. *Construction Management and Economics, 21*(2), 209-218.

Dainty, A. R. J., Cheng, M.-I., & Moore, D. R. (2005). Competency-Based Model for Predicting Construction Project Manager's Performance. *Journal of Management in Engineering, 21*(1), 2-9.

Dainty, A. R. J., & Lingard, H. (2006). Indirect Discrimination in Construction Organizations and The Impact on Women's Careers. *Journal of management in Engineering, 22*(3), 108-117.

Dainty, A. R. J., Neale, R. H., & Bagilhole, B. M. (1999). Women's Careers in Large Construction Companies: Expectations Unfulfilled? *Career Development International, 4*(7), 353-358.

Dainty, A. R. J., Neale, R. H., & Bagilhole, B. M. (2000). Comparison of Men's and Women's Careers in UK Construction Industry. *Journal of Professional Issues in Engineering Education and Practice, 126*(3), 110-115.

Dolfi, J., & Andrews, E. J. (2007). The Subliminal Characteristics of Project Managers: An Exploratory Study of Optimism Overcoming Challenge in the Project Management Work Environment. *International Journal of Project Management, 25*(2007), 674-682.

Duong, T. T., & Skitmore, M. (2003). *Women Project Manager's Workplace Problems: A Survey*. Journal of Women and Minorities in Science and Engineering. Paper not been published. School of Construction Management and Property. Brisbane.

Edum-Fotwe, F. T., & McCaffer, R. (2000). Developing Project Management Competency: Perspectives from The Construction Industry. *International Journal of Project Management, 18*(2000), 111-124.

Fielden, S. L., Davidson, M., Gale, A. W., & Davey, C. (2000). Women in Construction: The Untapped Resource. *Construction Management and Economics, 18*(1), 113-122.

Fielden, S. L., Davidson, M. J., Gale, A., & Davey, C. L. (2001). Women, Equality and Construction. *Journal of Management Development, 20*(4), 293-304.

Gale, A., & Cartwright, S. (1995). Women in Project Management: Entry into a Male Domain? a Discussion on Gender and Organization Culture - Part 1. *Leadership & Organization Development Journal, 16*(2), 3-8.

Gale, A. W. (1992). The Construction Industry's Male Culture Must Feminize if Conflict is to Be Reduced : The Role of Education as a Gatekeeper to a Male Construction Industry. In P. Fenn & R. Gameson (Eds.), *Construction Conflict: Management and Resolution, E and F.N* (pp. 416-427). London: Spon.

Ginige, K., Amaratunga, D., & Haigh, R. (2007). *Gender Stereotype: A Barrier for Career Development of Women in Construction*. Paper presented at the Built Environment Education Conference, University of Salford.

Greed, C. (2000). Women in the Construction Professions: Achieving Critical Mass. *Gender, Work and Organizations, 7*(3), 181-196.

Harris, D. (2007). *Integrated Management: Relevant for May & November 2007 Examination*. UK: CIMA.

Higgins, C., Duxbury, L., & Johnson, K. L. (2000). Part-time Work for Women: Does it Really Help Balance Work and Family? *Human Resource Development, 39*, 17-32.

Hyvari, I. (2006). Success of Projects in Different Organisational Conditions. *Project Management Journal, 37*(4), 31-41.

Kerzner, H. (2009). *Project Management: A Systems Approach to Planning, Scheduling and Controlling* (10th ed.). New Jersey: John Wiley & Sons.

Koshal, M., Gupta, A. K., & Koshal, R. (1998). Women in Management: a Malaysian Perspective. *Women in Management Review, 13*(1), 11-18.

Krefting, L. (2003). Intertwined Discourses of Merit and Gender: Evidence from Academic Employment in the USA. *Gender Work and Organization, 10*(2), 260-278.

Lee-Kelley, L., Leong, K., & Loong, K. (2003). Turner's Five-Functions of Project-Based Management and Situational Leadership in IT Services Projects. *International Journal of Project Management, 21*(2003), 583-591.

Love, P. E. D., & Irani, Z. (2003). A Project Management Quality Cost Information System for The Construction Industry. *Information & Management 40*, 649-661.

Maimunah, I. (2001). *Malaysian Women in Rural Development and Entrepreneurship: From Rural Producers to Urban Entrepreneurs*. London: Asean Academic Press.

Martin, C. C. (1976). *Project Management: How to Make it Work*: AMACOM.

Mirabile, R. (1997). Everything You Wanted to Know About Competency Modeling *Training and Development, 51*(8), 73-99.

Muller, R., & Turner, J. R. (2007). Matching the Project Manager's Leadership Style to Project Type. *International Journal of Project Management, 25*(1), 21-32.

Ogunlana, S., Siddiqui, Z., Yisa, S., & Olomolaiye, P. (2002). Factors and procedures used in matching project managers to construction projects in Bangkok. *International Journal of Project Management, 20*(2002), 385-400.

Omar, A., & Davidson, M. J. (2004). Women in Management in Malaysia. In M. J. Davidson & R. J. Burke (Eds.), *Women in Management Worldwide: Facts, Figures and Analysis* (pp. 259-272). England: Ashgate Publishing Limited.

Pheng, L. S., & Chuan, Q. T. (2006). Environmental Factors and Work Performance of Project Managers in the Construction Industry. *International Journal of Project Management, 24*(2006), 24-37.

Riger, S., & Galligan, P. (1980). Women in Management: An Exploration of Competing Paradigms *American Psychologist, 35*, 902-910.

Sayles, L. R., & Chandler, M. K. (1971). *Managing Large System*. New York: Harper and Row.

Shanmugam, M., Amaratunga, D., Haigh, R., Elvitigala, G., Baldry, D., & Ruddock, L. (2007). *The Role of Women in Construction Industry Development: The UK Perspective*. Paper presented at the CIB World Building Congress 2007.

Shohet, I. M., & Frydman, S. (2003). Communication Patterns in Construction at Construction Manager Level. *Journal of Construction Engineering and Management@ ASCE*, 570-577.

Shtub, A., Bard, J. F., & Globerson, S. (1994). *Project Management Engineering, Technology and Impementation*. New Jersey: Prentice Hall.

Stevenson, D. H., & Starkweather, J. A. (2010). PM Critical Competency Index: IT Exces Prefer Soft Skills. *International Journal of Project Management, 28*(2010), 663-671.

Tan, P. C. (1991). Female Participation at Higher Management Levels in the Public Sector *Status and Role of Malaysian Women in Development and Family Welfare*. Kuala Lumpur: University of Malaya.

Turner, J. R., & Muller, R. (2006). *Choosing Appropriate Project Managers: Matching Their Leadership Style to The Type of Project* Newton Square, PA, USA: Project Management Institute.

Turner, J. R., & Simister, S. J. (2000b). *Gower Handbook of Project Management* (3rd ed.). England: Gower Publishing.

Watts, J. H. (2007). Porn, Pride and Pessimism: Experiences of Women Working in Professional Construction Roles. *Work, Employment & Society, 21*(2), 299-316.

Wong, W. K., Cheung, S. O., Yiu, T. W., & Pang, H. Y. (2008). A Framework for Trust in Construction Contracting *International Journal of Project Management, 26*(2008), 821-829.

Worall, L., Harris, K., Stewart, R., Thomas, A., & McDermott, P. (2010). Barriers to Women in the UK Construction Industry. *Engineering, Construction and Architectural Management, 17*(3), 268-281.

Yousof, J. M. (1995). *Women in Finance in Malaysia.* Paper presented at the The Office for Women's Research, University of Hawaii at Manova