

Managerial Competencies of Female and Male Managers in Construction Industry

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Abstract- The construction industry is believed to be working with low profit due to poor performance and productivity. Mitigation of this problem is not possible until the reason of poor performance is found. Women hold relatively few management positions in the construction industry. Women hold relatively few management positions in the construction industry A right Managerial competencies will measure and evaluate on construction site. This research focuses on identification of such managerial competencies in construction industry. Also evaluates the managerial competencies of female project managers by administering a competency assessment test and comparing the results with the managerial competencies of male project managers. Literature supports the dependency of performance on competencies. Depending on managing change, planning and organizing, interpersonal skill, result orientation, leadership a Delphi method was carried out to shortlist the competencies. Questionnaire survey was conducted on identified indicators and basic statistical analysis of managerial competencies was done. The study concluded that female project managers do not differ much from male project managers in terms of their managerial behaviors.

Keywords— Managerial Competencies, Delphi Method, Workplace diversity.

I. INTRODUCTION

What is managerial competencies? Managerial competencies is Ability to effectively transfer and exchange information. Measuring tool which tells whether the progress is as per plan. It helps to focus on strategies and goals planned for Organization. Choosing the right manager relies upon a good understanding of what is important to the organization making progress towards those goals. Competencies evaluate the success of an organization as well as manager as person. A managerial competency is more than just knowledge and skills. It involves the ability to meet complex demands, by Drawing on and mobilizing psychosocial resources (including skills and attitudes) in a particular context. There are two types of competencies like behavioral and functional. Women are underrepresented in the construction industry. Ratio of female to male labor force participation rate is 34% (2014 year) according to international labor organization, which is

decreasing day by day. Most studies conclude that women's exclusion from the industry is mostly due to the industry's male-dominated culture, but no study ever attempted to find out whether women are excluded from project management positions in construction because they are deficient in managerial competencies.

None of the research studies published so far investigated whether women were excluded from project management positions in construction because they are less competent than male project managers. Is the managerial competence of female project managers at par with male project managers? The study presented in this paper tries to answer this question by measuring and comparing the level of managerial competency of women and men in construction. The next section discusses the methodology of the study after which the findings of the survey are presented and discussed. The conclusion of the study is presented in the last section.

II. OBJECTIVES OF RESEARCH

The objective of this paper is to collect and analyze the data on Managerial competencies for the construction industry from the execution and management professionals. The reviews on indicators are collected from client and contracting firm for monitoring productivity and evaluating performance.

		STEN SCORES		
		WOMEN	MEN	p value
Managing Change	Problem Solving	5.32	5.11	0.230
	Initiative	5.32	5.5	0.845
	Creativity & Innovation	5.49	5.98	0.442
	Adaptability	5.56	5.46	0.159
Planning and Organising	Decision making	5.9	5.65	0.530
	Time Management	4.9	5.3	0.548
	Quality Management	5.8	5.66	0.648
Interpersonal Skills	Financial Management	4.9	5.12	0.015
	Team work	5.33	5.03	0.866
	Communication	4.9	4.3	0.094
	Listening and Supporting	5.9	5.4	0.42
Result Orientation	Relating and Networking	5.7	4.9	0.9
	Business Awareness	5.67	5.5	0.117
	Learning Orientation	5.1	5	0.74
	Customer Focus	4.61	5.19	0.094
Disaster Management	Performance Management	6.1	5.9	0.004
	Response/Relief	4.9	4.71	0.0743
	Mitigation	4.39	3.9	0.311
	Resilience	3.77	3.84	0.82
	Vulnerability	5.61	4.91	0.159

Fig 1 Average STEN Score and p-values for Managerial Competencies

The areas focused in this study are:

1. Managerial competencies required in construction industry
2. Study of female and male managerial employment

III. METHODOLOGY OF STUDY

Managerial competencies were obtained by literature review and expert's opinion, which are followed by Delphi questionnaire to screen the indicators for further analysis. 21 experts from Construction industry were surveyed and Competencies were shortlisted to 24 competencies from 40 Competencies. Also the Management development questionnaire MDQ is a personal assessment instrument that is used to identify the strengths of chief executive officers, owners, presidents, executives, and managers. It was designed to assess the Managerial behavior of a single individual relative to 20 different competencies across five broad domains, namely managing change, planning and organizing, interpersonal skills, result orientation, and leadership, disaster Management. The competencies are self-explanatory. In this study, MDQ is used for the first time as a tool to collect information about the Managerial behaviors of a group of people as opposed to a single individual. Every competency was measured by three statements rated across five possible responses: strongly agree, agree, neutral, disagree, and strongly disagree. Respondents' answers were converted to a five-point scale, where 1 represents strongly disagree and 5 strongly agree. The total score for a competency is the sum of eight scores obtained in response to the eight statements that define that competency. So, the score of a competency varies between 4 and 20. The next step is converting these scores to a Standard Ten STEN scale which is used to rate participants' responses on a 1–10 range, based on a proprietary scale developed by HRD Press, Inc. for each and every competency separately by considering all respondents in all industries. According to Cameron and The Test Agency 1997, the STEN scores are statistically reliable and valid. This STEN Score will be used for further analysis.

IV. LITERATURE REVIEW

The focus of the literature is to briefly describe the Managerial competencies required in construction industry and the Gender Differences in Construction Industry.

The literature is mainly divided in three parts. The first part explains the Managerial competencies for performance. Second part discusses about Gender Differences in Construction Industry and third part about the STEN Score

Managerial Competencies

Robert Katz identifies three types of skills that are essential for a successful management process:

Technical Conceptual

Human or interpersonal management skills. As the name of these skills tells us, they give the manager's knowledge and ability to use different techniques to achieve what they want to achieve. Technical skills are not related only for machines, production tools or other equipment, but also they are skills that will be required to increase sales, design different types of products and services, and market the products and service.

Conceptual Thinking

Conceptual skills present knowledge or ability of a manager for more abstract thinking. That means he can easily see the whole through analysis and diagnosis of different states. In such a way they can predict the future of the business or department as a whole.

Human or Interpersonal Skills

Human or interpersonal managerial skills present a manager's knowledge and ability to work with people. One of the most important management tasks is to work with people. Without people, there will not be a need for existence of management and managers.

These skills will enable managers to become leaders and motivate employees for better accomplishments. Also, they will help them to make more effective use of human potential in the company. Simply, they are the most important skills for managers.

Interpersonal management skills are important for all hierarchical levels in the company.

Gender differences in construction industry

There is accumulating evidence that stress levels among construction professionals are increasing and that this is manifesting itself in the form of unsafe working practices, higher turnover, lower morale, and poorer performance. However, there has been no research into the influence of gender on stress levels in the construction industry. This is despite evidence that the underrepresentation of women may produce higher levels of stress among this part of the workforce.

Researcher investigates whether there are differences in sources and levels of stress between male and female professionals in the construction industry. The results indicate that overall, men experience slightly higher levels of stress than women. Although there are common sources of stress for both men and women, there are also some differences. In particular, men appear to suffer more stress in relation to risk taking, disciplinary matters, and implications of mistakes, redundancy, and career progression.

STEN Score

A STEN score indicates an individual's approximate position (as a range of values) with respect to the population of values and, therefore, to other people in that population. The individual STEN scores are defined by reference to a standard normal distribution.

V. RESULT AND DISCUSSION

Because the data are not normally distributed, the Mann-Whitney U test was conducted to determine whether the differences between female and male respondents' STEN scores in each competency are statistically significant or not. The significance level of the analysis was set at a p-value of 0.05. Statistical Package for Social Sciences was used to conduct the analysis.

As seen in Fig 1, the differences are not significant in most competencies. However, women ranked higher in 18 competencies one of which are statistically significant at 0.05. Men ranked higher in only Six competencies, namely resilience, customer focus, time management, financial management, creativity and innovation none of which are statistically significant. The results of the Mann-Whitney U test also revealed that the performance of women and men do not significantly differ in the five global competencies, i.e., managing change, planning and organizing, interpersonal skills, result orientation, and leadership.

VI. CONCLUSION

One of the greatest challenges facing female project managers is their acceptance to the construction industry by their male counter parts. The construction industry is one of the most male-dominated industries. Women are underrepresented in the industry due to its ingrained culture, unique nature, working conditions and project-based setup. The objective of this research was to find out if disparities exist between women and men in terms of managerial behaviors.

Based on the survey results and the statistical analysis conducted, women and men appear to have the same level of strength in managerial competencies. Women are as competent as men for holding project management positions in construction companies. Furthermore, women scored significantly higher in three competencies: sensitivity, customer focus, and authority and presence. In order to increase the number of women in the industry, one should improve the industry image, its working conditions, and working hours, rather than women's managerial abilities.

The results of this research are limited to the population surveyed. The study conducted encompasses a relatively small portion of the U.S. construction industry 63 participants. Further comprehensive research is required to take this study one step further by reaching more participants. Some control factors may be needed such as company type, company size, type of project under taken, geographical location, and level of managerial position. It should also be stated that the MDQ measures self-reported opinion so one's own behavior/competence, whereas the perceptions of their boss or coworkers may be equally important. The study might have been fitted from additional ratings other respondents by their bosses or coworkers. But the difficulties in collecting additional data of this kind are immense. While this avenue was not pursued in this study, it can be explored in future work.

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