



Leadership Styles of Women Project Leaders and Its impact on Organizational Performance in Construction Sector

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Abstract:

Construction sector contributes significantly for the growth of GDP in every country. The studies revealed that as it is a male dominated sector and the contribution of women in this sector is very minimum. Women who work here face many challenges and hence they are compromised to take up only administrative or secretarial positions than core responsibilities. Effective leadership styles enhance quality of work environment and organizational performance. Hence this study aims to study various leadership styles adopted by women project leaders and which style is more significant in attaining organizational performance. The study found that charismatic, participative and benevolent leadership styles are prevalent and participative leadership is more effective in attaining organizational performance.

Keywords: Women, Project leaders, construction sector, leadership styles, participative

Introduction

Construction Sector is the major source of sustainable growth of any country. It contributes for infrastructure development, employment generation and economic growth of any country (Ofori, 2012). Indian Construction Sector grows rapidly after agriculture sector. It crossed over three trillion crores Indian rupees in the last quarter of 2022. Though it was worst hit by coronavirus pandemic but revived very fast after 2020. There has been a consistent and significant growth in providing employment opportunities. The success of any construction organization depends upon how effectively its projects have been handled, leadership or management styles in handling employees and other resources and updated skilled manpower.

Though it is a male dominated industry, Women took a key role in its sustainable growth. The contribution of women in labour work force has been increasing steadily and as per the world bank statistics the women labour work force contributing Indian growth and development is 23.5 percent only. When we consider the women contribution at top level positions is much lesser due to the problems of glass ceiling and higher educational qualifications etc. Though women leaders bring lot of change in the organizational culture but only one to two percent of women reaches the top-level management positions.

The present study aims to understand prevailing leadership styles adopted by women project leaders in construction sector and to analyse the role of leadership styles on the successful completion of various projects.

Literature Review

Leadership is one of the oldest concepts in the world and very attractive topic even today for many. Effective leadership brings lot of changes in work culture and motivates their employees to work in the direction of attaining the targets. Leadership is the ability to influence the employees, boost the confidence and finally attain the organizational goals (Kim and Maubourgne, 1992). Effective leadership shows its impact on dynamic organizational culture, organizational and employee

performance and motivated employees (Zhang et al., 2020). The ineffective leadership causes increased employee turnover and unattained targets and finally can't face the challenges raised by competitors (Baig S A et al., 2021).

Women contribution in construction is very less. More than 85 % women who ever are in construction industry are performing administrative and secretarial services. If their services are extended to other departments, lead to overall organizational performance. Hence it is recommended to increase the strength of women workforce for various positions in construction sector.(Thayaparen et al., 2010).

The main barriers for lower contribution of women in construction industry are identified from two perspectives namely home or societal perspective and organizational perspective. Due to family responsibilities, women are chosen only administrative or secretarial positions than the core responsibilities. They assumed that they could manage both family and organizational responsibilities with low stressed jobs. From organizational perspective, it is identified that discrimination in pay packages are identified between male and female, hence many women have not come forward to take up core responsibilities. (Thurairajah et al., 2001)

Another study on barriers of career progression of women in construction sector in UK found that the male dominated sector where male employees are preferred to women is the main source of barrier. Along with that leadership styles adopted by women and career obstacles obtained from supervisors, subordinates and peer group are the other barriers women face in construction sector.(Ginige et al., 2008).

Many researchers agreed that project leaders must possess firm and capable leadership qualities. Project leadership qualities differ with other. Project is normally a temporary based work environment and depending upon the crisis situations, project leaders need to exhibit different leadership qualities. Most of the time they need to handle semi-skilled and artisans who may not have higher educational qualifications.(Shanmugam et al., 2006).

Leadership style plays critical role in improving organization's performance. Poor leadership style may also lead to organizational performance too. Some of the research studies revealed that transactional leadership style plays a critical role in improving quality of employee performance. Effective communication plays a key role in elevating transactional leadership. (Alshehhi et al., 2023).

Effective leadership of the supervisors encourages both in role and extra role of subordinates. The autonomy given to them and involvement in decision making helps to improve their commitment and this attitude encourages to enhance organizational performance. A Supportive environment provided by leaders makes the subordinates feel more possessive towards their work. The availability of leaders during the period of crisis boost the subordinates and creates the confidence in them that their supervisor supports them in all the situations.(K. S. Ali & Islam, 2020).

The ability of leaders to motivate and inspire their subordinates fetch extra ordinary results to the organization. Leaders inspire their followers in such a way that the followers forget to work individual goals and contributes their potential in attaining project goals. Leaders also brings out the innovative skills of their subordinates by allowing them to commit mistakes and learn from its results. The effective leadership styles enhances the work climate in the organization which helps to improve organizational performance.(N. M. Ali et al., 2015).

From the above various literature available it is identified that many studies on women leadership at construction sector have been conducted at UK, Canada and other developed countries and a very few studies are available in India. Most of the studies are explaining the role of leadership styles in enhancing organizational performance. Many studies revealed that the contribution of women in construction sector are very minimum as it is a male dominated sector and there are many barriers for women for building their prospective career in this construction sector.

Hence the present study aimed to find out the leadership style adopted by women project leaders and curious to know which leadership style(s) will support to enhance organizational performance.

Methodology

The present study is a descriptive study to understand the various leadership styles adopted by women project managers in construction sector. As their job is to handle various projects, handling unskilled, semi- skilled and skilled manpower. They always work with the pressure of timelines which they must complete on time. Maintaining quality of service is another important milestone in their job.

The present study is conducted in Mumbai which is a metropolitan city and commercial capital of India. Here the construction industry plays a key role in terms of infrastructure development activities, construction of new metro train services, city expansion services and building multi storey building which appears as skyscrapers. The approximate population of Mumbai is around 2 crores, and it is assumed that around 10,000 women employees are working construction industry with different designation. The present study has considered only the executive women working in various projects of construction sector. By Cochran formula, estimated the required sample by considering the population size as 10,000 with 95% confidence level and identified the required sample size was 105.

The researcher has distributed the questionnaire around 140 and got responses around 132, out of which 6 questionnaires are disqualified as all statements are not answered. Hence the present study consists of 126 sample size.

The researcher used snowball sampling method which is a non-probabilistic sampling technique in reaching the respondents.

The study has used both primary and secondary data. The secondary data consists of books, journals, internet sources etc. The primary data has been collected with a structured questionnaire. However, the researcher got the opportunity to interact the respondents directly regarding the problems and issues of their profession too. The study has used 5-point Likert scale with statements of agree, frequency of time.

The questionnaire is divided into three parts. Part-1 consist of demographic variables which includes age, experience, educational qualifications, marital status, designation, and their department. Part-2 consist of items related to various items to describe different leadership styles adopted by women project leaders in construction sector. Part-3 consist of items related to measure the organizational performance. Six variables are identified for measuring it. They include (a) meeting operational goals, (b) completions of projects as per schedule, (c) Projects stay within budget lines (d) Meeting technical standards, (e) Meeting stakeholders' expectation and (f) reaching stakeholders' satisfaction. Successful completion of projects helps to enhance the organizational performance. Hence the study has the following objectives and hypotheses.

Objectives:

1. To study the leadership styles adopted by women project leaders of construction sector.
2. To find which leadership style has more impact on organizational performance
3. To understand the role of demographic variables such as age, experience, educational qualifications, and marital status of women project leaders on organizational performance.

Hypotheses

H₀₁: No Leadership styles has significant impact on organizational performance.

H₀₂: Age of women project leaders has no significant impact on Organizational Performance.

H₀₃: Experience of women project leaders has no significant impact on Organizational Performance.

H₀₄: Educational qualifications of women project leaders has no significant impact on Organizational Performance.

H₀₅: Marital status of women project leaders has no significant impact on Organizational Performance

The study used descriptive statistical tools such percentage and average to study the profiles of respondents and analyse the responses of the samples. The data reduction technique which is known as factor analysis is used to identify which leadership styles is adopted by most of the women project leaders working in construction sector. Linear regression technique is used to find the impact of leadership styles on organizational performance. One way ANOVA tests have been conducted to compare means and find the significant differences in demographic variables on organizational performance.

Analysis and Results

Data analysis is the crucial part of any research study. It fulfils the curiosity of the researcher by finding the answers to their research questions. The present quantitative study aimed to understand various leadership styles adopted by women project managers working in various construction firms. This study also tried to find the impact of leadership styles on individual employee performance and on organizational success.

Cronbach's Alpha	N of Items
.830	36

The Cronbach's alpha test has been conducted to find the reliability of the data. Its value is 0.830, which is greater than 0.7, Hence, it is considered as excellent.

Demographic profiles of the sample:

The table 2.0 represents the demographic profile of the women respondents who have participated in the study. Age is classified into three categories. Most of the participants belong to less than 30 years. Experience is classified into three categories such less than 7 years, 7.1 years to 14 years and 14.1 years and above. Most of the respondents of this study belong to less than 7years of experience.

Marital status is classified into three categories namely Married, Unmarried and Divorcees. Most of the respondents belong to unmarried women who are in the early stages of their career. The respondents have the following educational qualifications namely professional graduation (B. Tech/B. Arch) with Postgraduation (MBA), Only professional graduation i.e., BTech/ B. Arch and any other graduation like B. Com and CA. Most of the respondents belong to first category that is Professional qualification with post-graduation (MBA) qualification.

The respondents are having different designation such as Assistant Manager, Junior Architect, Senior Architect, project Manager, Business Development Officer, Delivery Manager, technical officer etc from different departments namely Design & Architectural Services, Project Planning& Project Execution, Customer Service Department, Sales, Marketing & CRM, Project Monitoring, Finance/HR/Admin departments etc. It may be different organizations have different nomenclature for their designations and departments.

Table-2: Demographic Profile		
Age	N	Percentage
Less than 30	65	51.6
31 to 40 years	54	42.9
41 years and above	07	5.6
Experience		
Less than 7 years	112	88.9
7.1 years to 14 years	12	9.5
14.1 years and above	02	1.6
Marital Status		
Married	69	54.8
Unmarried	49	38.9
Divorcee	08	6.3
Educational Qualifications		
Post graduation (MBA)	69	54.8
Professional Program (B.Tech /B.Arch)	47	37.3
Any other graduation	10	7.9

Objective-1: To study the leadership styles adopted by women project leaders of construction sector.

Factor analysis has been conducted to identify prevailing leadership styles adopted by women project leaders. There are twenty-three (23) items are prepared to understand the leadership styles of women project managers. Factor Analysis is a data reduction technique which has grouped twenty-three (23) items into four (4) components. The details are discussed below.

KMO and Bartlett's test: The Kaiser-Meyer-Olkin (KMO) Measure of Sampling adequacy test and its values lies between 0 and 1. The value closer to 1 indicates highly adequate sample. Bartlett's test of sphericity tests the normalcy of the sample.

Table -3 indicates KMO value as 0.864 which is above 0.8 hence it is interpreted as sample is adequate to conduct factor analysis and significant value (p-value) which is 0.000 (less than 0.05) indicates that the sample follows normalcy supported by statistically significant chi square value..

Table-3: KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.864
Bartlett's Test of Sphericity	Approx. Chi-Square	1300.195
	df	190
	Sig.	.000

Table -4 indicates the total variance explained by factor analysis. Principal Component extract method was used for analysis. It is noted from the table that the first four components explain 42.49% of cumulative variance of leadership styles.

Table -5 indicates the results of rotated component matrix. From this table it is evident that the various components covered in each component. The first component has the following five items-(a)love to mentor other people to develop, (b) Good at getting things done through his charisma (c) Provide recognition /rewards when others reach their goals, (d) Have a vision of where we are going and set long-term goals and (e) Encourage innovative approach and creative thinking in team. By considering all the items in this component, this is named as 'charismatic leadership' who always get things done through his charisma and provide support to his members.

Total-4: Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
	1	4.584	19.930	19.930	4.584	19.930	19.930	2.902	12.619
2	2.023	8.794	28.724	2.023	8.794	28.724	2.792	12.139	24.758
3	1.602	6.963	35.687	1.602	6.963	35.687	2.429	10.561	35.319
4	1.565	6.806	42.492	1.565	6.806	42.492	1.650	7.173	42.492
5	1.459	6.342	48.834						
6	1.442	6.270	55.105						
7	1.294	5.624	60.729						
8	1.019	4.428	65.157						
9	.962	4.183	69.340						
10	.922	4.007	73.347						
11	.754	3.277	76.624						
12	.737	3.203	79.827						
13	.641	2.785	82.612						
14	.609	2.647	85.259						
15	.567	2.464	87.723						
16	.559	2.431	90.154						
17	.485	2.109	92.262						
18	.455	1.980	94.242						
19	.408	1.772	96.014						
20	.336	1.459	97.473						
21	.289	1.255	98.728						
22	.233	1.011	99.739						
23	.060	.261	100.000						

Extraction Method: Principal Component Analysis.

The second component consist of 5 items namely- (a) Good at bringing out the best in other people, (b) Entrust responsibilities to team members based on past performance (c) Enjoy working on committees/teams/ task forces (d) Consider alternate solutions for a particular problem and (e) Allow my team to determine what needs to be done. As all the items related to team has been grouped, this component is named as ‘participative leadership’ component.

The third component consist of three items namely, (a) People look at me for help (b) Open to suggestions and (c) Willing to take responsibility when a team member fails. Hence this component is named as ‘benevolent leadership’ component.

The fourth component consist of three items namely, (a) Standards and guidelines are the most important (b) Focus on my own tasks to bring out the best results and (c) Employees receive instructions without questioning. Hence this component is named as ‘autocratic leadership’ component.

	Component			
	1	2	3	4
Setting up goals and targets.				
Open to suggestions			.855	
Willing to take responsibility when a team member fails			.545	
Employees receive instructions without questioning				.630
Good at bringing out the best in other people		.634		
Good at adapting to different situations				
Enjoy working on committees/teams/ task forces		.615		
Most important thing for a group is the well-being of its members				
People look at me for help			.889	
Guide team members without any force				
Analyse situations from different perspectives				
Good at getting things done through charisma	.658			
Set myself high standards and expect others to do the same				
Love to mentor other people to develop	.744			
Provide recognition /rewards when others reach their goals.	.641			
Encourage innovative approach and creative thinking in team	.532			
Standards and guidelines are the most important				.717
Focus on my own tasks to bring out the best results.				.675
Have a vision of where we are going and set long-term goals	.579			
Allow my team to determine what needs to be done		.503		
Consider alternate solutions for a particular problem.		.525		
Before giving feedback, try to see things from other's point of view				
Entrust responsibilities to team members based on past performance records		.634		
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.				

Objective-2: To find which leadership style has more impact on organizational performance.

H₀₁: No Leadership style has significant impact on organizational performance.

Simple linear regression test has been conducted to find which leadership style has more impact on organizational performance.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.765 ^a	0.585	0.543	765.540

a. Predictors: (Constant), Autocratic Leadership, Benevolent Leadership, Participative Leadership, Charismatic Leadership

Table-6 provides model summary which indicates R and R square values. R value indicates the correlation between dependent and independent variables. The R value from table -6 is 0.765 which indicates the positive correlation between dependent and independent variables. The R square value indicates how much variance in dependent variable is explained by independent variable. From the table it is noticed that R square value is 58.5% which means 58.5% of variance in dependent variable is explained by independent variable.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.763	4	1.941	4.319	.003 ^b
	Residual	54.372	121	.449		
	Total	62.135	125			
a. Dependent Variable: Organizational Performance						
b. Predictors: (Constant), Autocratic Leadership, Benevolent Leadership, Participative Leadership, Charismatic Leadership						

Table-7 indicates the ANOVA table which explains whether the model fit to predict the dependent variable. The significant value (p-value) is 0.003, which is less than 0.05. It means this model is fit to predict organizational performance (dependent variable) through various leadership styles (independent variables).

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.853	.559		3.312	.001
	Charismatic Leadership	.155	.118	.127	1.312	.192
	Participative Leadership	.283	.104	.259	2.731	.007
	Benevolent Leadership	.016	.077	.019	.212	.833
	Autocratic Leadership	.046	.061	.064	.751	.454
a. Dependent Variable: Organizational Performance						

Table -8 indicates the coefficients to predict organizational performance. By observing the significant values (p-values) it is noticed that only constant and participative leadership are significant, and the remaining are not significant. It indicates that participative leadership has the significant impact on organizational performance than the remaining leadership styles.

Hence the linear equation be written as

$$\text{Organizational Performance} = 1.853 + 0.283 (\text{Participative leadership}).$$

Objective-3: To understand the role of demographic variables such as age, experience, educational qualifications, and marital status of women project leaders on organizational performance.

H₀₂: Age of women project leaders has no significant impact on Organizational Performance.

As the number age groups are more than two groups, One way ANOVA test has been conducted to compare mean differences among the age groups. Table-9 indicates the frequency and average score of organizational performance of women project leaders. From the table it is noticed that the mean score of organizational performance is higher among the age group –

Table-10 indicates one way ANOVA test results between different age groups and organizational performance. The p-value is 0.263 which is more than 0.05 hence null hypothesis is accepted which means that there is no significant difference in organizational performance among various age groups.

	N	Mean
Less than 30 Years	65	4.0282
31-40 Years	54	3.8241
41 years and above	7	3.8095
	126	3.9286

Organizational Performance					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.334	2	0.667	1.349	.263
Within Groups	60.801	123	0.494		
Total	62.135	125			

H₀₃: Experience of women project leaders has no significant impact on Organizational Performance.

	N	Mean
Less Than 7 Years	112	3.9658
7.1 years to 14 years	12	3.4028
14.1 years and Above	2	5.0000
Total	126	3.9286

Organizational Performance					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.768	2	2.884	6.294	0.002
Within Groups	56.366	123	.458		
Total	62.135	125			

One way ANOVA test has been conducted to analyse the significant difference in organizational performance among various experience groups of women project leaders. Table-11 shows the frequency and means of organizational performance of women project leaders. It is noticed that mean score is higher in third group and the score is lowest in second group.

Table 12 indicates test results of ANOVA conducted between different experience groups and organizational performance. The significant value (p-value) is 0.002 which is less than 0.05 hence

rejecting null hypothesis hence there is a significant difference in organizational performance based on different experience groups.

H₀₄: Educational qualifications of women project leaders has no significant impact on Organizational Performance.

There are three educational qualification groups namely post graduate program in management, professional graduation like BTech or BArch and other graduation programs as the third group. Hence One ANOVA test has been conducted to compare mean scores among these three groups.

	N	Mean
Post Graduation in Management	69	3.7778
Professional Qualifications	47	4.1525
Any other Graduation	10	3.9167
Total	126	3.9286

Organizational Performance					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.927	2	1.963	4.149	0.018
Within Groups	58.208	123	0.473		
Total	62.135	125			

As the significant value is 0.018 which is less than 0.05, the null hypothesis is rejected. That means there is a significant difference in the score of organizational performance based on their educational qualifications.

H₀₅: Marital status of women project leaders has no significant impact on Organizational Performance.

The marital status of women project leaders has been classified into three categories namely married, unmarried and Single or divorcee.

	N	Mean
Married	69	3.867
Unmarried	49	4.034
Single or Divorcee	8	3.8125
Total	126	3.9286

Organizational Performance					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.913	2	0.456	.917	0.402
Within Groups	61.222	123	0.498		
Total	62.135	125			

The mean score of organizational performance is higher in Unmarried women and lower in married women project leaders. From Table-16 the significant value be noted as 0.402 which is higher than 0.05. Hence accept null hypotheses that means there is a significant difference in mean scores of organizational performances based on the marital status of women project leaders.

Findings and Discussions

Women Project leaders have been exhibiting mainly the combination of the following four leadership styles namely charismatic leadership, participative leadership, benevolent leadership, and autocratic leadership. Out of all the leadership styles, participative leadership style has shown significant impact on organizational performance. Less than 30 years of age group has shown higher organizational performance. Women project leaders who have more than 14 years of experience have scored higher organizational performance than their other counterparts. Women Project leaders have higher organizational score when compared with other Postgraduates in management program and other graduate women leaders. Unmarried women project leaders have secured higher score in their organizational performance.

The study can extend to other semi-skilled and skilled women professionals working in construction sector. It can also be extended to women professionals working in other sectors and women entrepreneurs.

The study results help the management of construction sector to welcome women professionals. The study clearly indicated the commitment levels of women professionals in handling tough tasks, worker category employees and hard work culture.

Women project leaders can show their success stories to higher authorities and make a difference in their perception. Though the construction industry is mostly male dominated, the study results indicated the higher commitment levels of women leaders. Hence it is advisable to offer the middle and top-level positions to women professionals who are serious with their profession and career growth.

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