IDENTIFYING THE FACTORS AFFECTING ORGANIZATIONAL CULTURE AND PROJECT SUCCESS IN CONSTRUCTION INDUSTRY OF PAKISTAN

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ABSTRACT
Objective: This paper aims to identify the important parameters of organizational culture and project success in construction projects of Pakistan.
Research Method: Qualitative method was approached in this research. A detailed literature review has been done to identify the parameters affecting organizational culture and project success, after that semi-structured interviewwere conducted with clients, contractor and consultants involved in construction projects of Pakistan to identify the importance level of parameters affecting the organizational culture and project successin construction projects.
Findings: The study identified six important factors which affect organizational culture among all 36, and 4 important factors affecting project success among all 31.
Originality: The study identifies the Importance index of the factors affecting the organizational culture and project success in construction projects of Pakistan. The qualitative method applied in this study is expected to provide new insights in the organizational culture and success of project to helping in understanding how the factors affecting Organizational culture and success of construction projects.
Keywords: Construction Industry, Organizational Culture, Project Success

1. INTRODUCTION

One of the most critical sectors of a country's economy is its construction industry. The construction industry contributes to social and economic development and employment (Memon et al. 2018). In modern construction, there are significant challenges, both for contractors and customers especially due to the complex design and the involvement of many stakeholders. Pakistan is a developing country with robust construction industry. Pakistan's economy is based on construction, and large part of its revenues comes from there. Thus, it is understood that the contribution of Pakistan's construction industry is large over the years in terms of economic recovery and job creation. After the 1990s, which were not good for the Pakistani economy, the country's economy started to recover. Also, due to increase in the population in recent years has insisted to improve existing, as well as to build new infrastructure (Easterly, 2001). Thus, when executing a project, it is necessary to comply with strict conditions regarding the management of its cost, time, quality and safety. It is also necessary for all members of each company to have a common organizational culture of rules and values that will be followed by all members of the team (Iram et al., 2016).

In In all mega construction projects, communication and cooperation among organizations is essential and for that an open organization culture is must. Due to cultural differences in organizations many mega construction projects have not been successfully completed (Leth et al., 2019). Thus, through this work, the impact that the organizational culture has on the success of a construction project will be analyzed, as well as the relationship that this has with the components of the success of a project. The construction environment of Pakistan will be extensively studied in striving to contribute to the improvement of the tactics followed when carrying out a project in the construction industry of Pakistan.

2. LITERATURE REVIEW

2.1 ORGANIZATIONAL CULTURE

Defining Organizational culture is a pattern of some core values, beliefs and assumptions shared by the members of a team (Schein, 1991). (Mironenko and Sorokin, 2018) argued that culture is a system of shared values, which creates some rules among team members. The shared values are those that dominate the organizational culture of a company while typical values are the main factors for maintaining the competitive advantage of a company (Madhani, 2014). The shared values of a business should be simple, should have an important place in the organization and should be at an abstract level. Thus, it is understood what the organization represents and what the company culture believes in. Organizational culture are common thoughts, values, behavioral patterns and standard decision-making methods (Alvesson, 2012). (Schein, 2009) mentioned that corporate culture reflects the set of standard behaviours, values and beliefs, which constitute the identity of an organization.

Different researchers have put their efforts to identify the effective parameters of organizational culture in the construction industry are shown in table 1.

Table 1: Parameters of Organizational Culture

S. No	FACTORS	(Patyal et al. 2019)	(Denison et al. 2004)	(Fernández-Pérez et al. 2014)	(Vakola, 2014)	(Ingle et al,. 2020)
1	Empowerment of employees to act	x	x			
2	Assessing employee concerns and ideas	x				
3	Human relations	x				
4	Teamwork	x	x			
5	Growth and development	x	x			
6	Innovation	x				
7	Creative problem-solving processes	x				
8	Task focus	x				
9	Accomplishment, goal achievement	x				
10	Objective setting	x				
11	Goal clarity	x				
12	Efficiency	x				
13	Productivity, profitability	x				
14	Outcome excellence, quality	x				
15	Structure Stability	x				
16	Stability		x			
17	Job satisfaction		x		x	
18	Core values		x		x	
19	Aggrements		x			
20	Performance orientation		x			
21	Job autonomy		x			
22	Trust in supervisor		x		x	
23	Rewards system		x			x
24	Acceptance of I.T and innovation in orgnization	x	x	x		
25	Open communication/ cohesion	x	x	x	x	

26	Goals, objectives and visions	x	x			
27	Knowledge creation		x			
28	Employees participation in decision making process/	x	x			
29	Orgnizational learning		x			
30	Stratgic direction and intent		x			
31	Workload pressures			x		
32	Managerial support			x		
33	Leadership & management style		x			x
34	Organisational structure, policies & practices					x
35	Working environment & nature of tasks		x			x
36	Attitude of organization to risk-taking & innovation			x		x

2.2 PROJECT SUCCESS CRITERIA

Project will be considered as success when the project is completed on time, within budget and the quality is satisfied by all (Ahsen et al. 2021). Success also can defined as much better results than the expected or normally obtained in term of cost, schedule, quality, and safety (Chan et al., 2002). Project success is defined by criteria and standards that aid project participants in completing projects with the greatest possible results. Despite multiple studies, no consensus exists on what should be the primary success factor for building projects, hence this concept remains ambiguous. An overall success is defined as a project that achieves the technical performance standards and missions, as well as a high degree of satisfaction with the project outcome among the organisation, project team, and customers. The successful accomplishment of cost, time, and quality objectives were regarded as project management success which is directly; project success deals with the final project objectives. The traditional measurements of time, money, and quality, or the so-called iron triangle, have been the dominating performance indicator in construction projects (Ogunlana, 2010).

2.2.1 TIME CRITERIA

The agreed/approved duration for the compilation of a project is referred to as time or schedule. Construction duration, construction speed, and time overrun may all be measured in time Criteria (Chan et al., 2004) (Chan and Chan, 2004). The schedule performance index, proposed by (Heravi and Ilbeigi, 2012), and it is a measure of a project's schedule efficiency. Time generally refers to the approved or agreed duration for the execution of a project. Time is measured in terms of the period of construction, its speed and the exceeding of its time (Sardar et al., 2021). Time management is essential for every project's success. Lack of schedule management is the most prevalent cause of inflated project budgets. To figure out how much time the project will take, we must first figure out how much time each project activity will take to complete. Any project may be divided up into multiple tasks. When time is of the importance, quality and cost must be harmonized. If a project's completion is rushed, more resources are required, which increases the project's cost. Changing the time (schedule) can sometimes have an impact on both the cost and the quality of the service. If a project has a tight schedule, quality may be sacrificed in order to fulfil the deadline. When a project's duration is reduced, more workers and more productive equipment are required, increased costs. Obviously, there is a link between cost and time (Talpur et al., 2022).

2.2.2 COST CRITERIA

In general, cost refers to the extent to which building work is completed within the projected budget. According to (Chan and Chan, 2004), cost should not be limited to the tender sum and should include any expenses incurred as a result of changes, modifications made throughout the construction phase, and costs incurred as a result

of legal claims, such as litigation and arbitration. Cost can be measured as unit cost or as a percentage of net variance over final cost (cost overrun). The cost performance index (CPI) is a measure of a project's cost efficiency introduced by (Heravi & Ilbeigi, 2012). Cost generally refers to the execution of construction activities for the completion of a project within the estimated budget carried out in the initial phase of the project (Habibi et al., 2018). (Pinkasovitch, 2021) introduce the CPI cost-effectiveness ratio, which is an indicator that can show the efficiency of a project. Costs are essential for the business as well as from a competitive standpoint. All firms strive to maintain and improve their quality while lowering their costs. However, achieving both of these goals at the same time is quite difficult. It's because cost and quality are linked. In Pakistan, poor time and cost performance of the construction is recognized as the severe and frequent issue (Memon et al. 2019).

2.2.3 QUALITY CRITERIA

This is a traditional criteria, although it's often misused. While some researchers use quality as a single main criterion (Chan et al., 2002) (Selala et al., 2019), others use quality, technical performance, and functionality as separate criteria (Chan et al., 2004). Product and process quality are used independently by (Heravi & Ilbeigi, 2012). According to (Chan et al., 2004), the quality will be assessed subjectively using a seven-point scale. In the post-construction phase, after the project is done and delivered (Chan, 2001) (Chan et al., 2002), as quoted in (Takim & Adnan, 2009), regard project functioning as one of the success measures. According to them, project functioning is linked to project participants' expectations and is best assessed by conformance to all technical standards. In the literature, many researchers use the criterion of quality as the only criterion for measuring the success of a project (Silva, 2016).

A construction project's primary aim is to achieve three fundamental requirements set out by the client: cost, time, and quality. The construction project, in particular, is plagued by a slew of quality concerns that result in budget overruns, timetable delays, financial losses, environmental harm, and even fatality (Mahatre et al., 2017) (Ahmed, 2021). Quality and organizational culture (OC) are typically related (Nukic and Huemann, 2016). Understanding of OC is necessary to increase the quality of building projects (Schein, 2009).

Table 2: Mapping of the Project Success Criteria

S. NO	FACTORS	(Smetanková et al. 2021)	(Sherif, 2009)	(Shokri and Kavoousi, 2009)	(Turner and Xue, 2018)	(Turner and Zolin, 2012)	(Sibiya et al., 2015)	(Anup et al., 2015)	(Meng, 2012)	(El Asmar et al., 2013)	(Tripathi and Jha, 2018)	(Rahman et al., 2018)	(Das and Ngacho, 2017)
1	Cost of project	x				x	x	x		x		x	x
2	Project's productivity	x	x					x			x		x
3	Time of the project		x			x	x						x
5	Safety measurement		x			x		x				x	x
6	Schedule		x							x			
7	The satisfaction of the client on project	x				x		x					x
8	Organizational strategic goals	x	x		x								

9	Potential for marketplace success		x		x							
10	Use of new technologies		x		x							
11	Innovation and development of the construction industry		x									
12	Delivering socioeconomic benefits to the community/local area		x	x								
13	Sustainability in environment, society and economy		x	x								
14	Maintaining social cohesion/society harmony		x	x								
15	Enhancing people's national pride and confidence		x	x								
16	Risk management					x						
17	Quality of the project	x				x	x	x		x		x	x
18	Performance of project's team												x
19	Recruitment												x
20	The profitability of the project	x				x			x				
21	Financial mearsuement	x						x		x			
22	Effective communication							x	x	x			
23	Customer relation/ Stakeholder relationship		x					x		x			
24	Effect of environment						x						x
25	Proper training												x
26	Project Leadership							x					x
27	Efficient techniques adopted												x
28	Human resource management	x				x			x				
29	Growth and learning		x		x					x			
30	Satification of customer	x		x			x		x				
31	Delivering of Project successful		x		x						x		

3. RESEARCH METHODOLOGY

A qualitative method has been used in this research. The collection of data for this study was done through semi-structured interviews with the help of a questionnaire form from experts who are engaged in the construction industry of Pakistan. The questionnaire form is based on the factors of organizational culture and project success criteria. The participants were asked about the level of relevancy for each factor by using a 5-point Likert Scale. The Likert scale is used as the assessment scales to target the audience and it helps the respondents to indicate the level of disagreement or agreement in easy manner (Almarashda et al. 2021). In this study, the Liker scae was used as 1 for Not Relevant, 2 for Slightly Relevant, 3 for Moderately Relevant, 4 for Highly Relevant, and 5 for Extremely high Relevant. The participants were also asked about the level of significance for each factor by using a 5-point Likert Scale as 1 for Not significant, 2 for less significant, 3 for Moderately significant, 4 for Highly significant, and 5 for Extremely high significant. To get reliable data, the experts having experience of at least 6 years were selected for interview. Total 11 respondents representing contractors, clients, and consultants have been interviewed. The response of the participants for each factor was recorded and analyzed statistically. In this study, the Importance Index technique is used to determine the relative importance of the relevancy level and significance of Organizational culture parameters and project success criteria (Ahmed et al., 2021). The formula for RII is given below:

- ***Relevancy Index:*** This index expresses the Relevancy of each Parameter. It is computed as per the following formula as adopted by Memon et al. (2018b) and Almarashda et al. (2022):

$$R.I = \frac{\sum_1^5 (a_i n_i)}{5N}$$

Where: a = constant expressing the weight assigned to each response (ranges from 1 for Not Releventto 5 for Highly Relevant), n = frequency of each answer, N = total number of responses.

- ***Significance Index:*** This index expresses the significance level of each parameter. It is computed as per the following formula:

$$S.I = \frac{\sum_1^5 (a_i n_i)}{5N}$$

Where: a = constant expressing the weight assigned to each response (ranges from 1 for Not Significantto 5 for Extremely Significant), n = frequency of each answer, N = total number of responses.

- ***Importance index:*** This index expresses the importance level of the each parameter of Organizational culture and Project success. It is determined with relevancy and significance level using the following formula:

IMP.I. = R.I. * S.I.

4. RESULTS AND DISCUSSIONS

Collected data from experts during semi-structured interviews was analyzed statistically to conclude the most effective parameters of Organizational culture and project success. Analysis of the data was done with the help of SPSS and Microsoft Excel. Before analyzing the factors, the demographic was analyzed as in table 3.

Table 3: Demography of the Respondents

S. No	Designation	Type of organization	Education	Field Experience
1	Construction manager	Contractor	B.E (CIVIL)	10 years
2	General manager	Client	B.E (CIVIL)	18 years
3	CEO	Contractor	B.E (CIVIL)	20 years
4	Executive Engineer	Client	M.E (CIVIL)	12 years
5	Assistant Engineer	Client	M.E (CIVIL)	5 years
6	Assistant Engineer	Client	M.E (CIVIL)	9 years
7	CEO	Contractor	B.E (CIVIL)	16 years
8	Resident Engineer	Consultant	B.E (CIVIL)	16 years
9	Assistant Resident Engineer	Consultant	B.E (CIVIL)	5 years
10	Assistant Engineer	Client	B.E (CIVIL)	8 years
11	Resident Engineer	Consultant	B.E (CIVIL)	16 years

From the table 3, it can be seen that the respondents participating in this data collection process have a minimum experience of 5 years and a maximum experience of 20 years. The average experience per respondent is more than 10 years. Among these experts, five respondents are working with client organizations; three respondents are working with consultants, and three respondents are working with the contractors. The data shows that it is reliable and relevant because experts have adequate technical and engineering education and are held at management and technical position in the organizations. Collected data analyzed and presented in given table 3.

Table 4: Parameters of Organization Culture

S. No	Parameters of Organization Culture	Relevancy Level (AI)	Significance Level (AI)	Importance Index (II)	Rank
1	Commitment	0.909090909	0.890909	0.809917	1

2	Teamwork	0.927272727	0.854545	0.792396	2
3	Participation	0.854545455	0.872727	0.745785	3
4	Core values	0.872727273	0.854545	0.745785	4
5	Resources	0.854545455	0.854545	0.730248	5
6	Goals, objectives and vision	0.854545455	0.854545	0.730248	6

From the table 4, it can be seen that the Commitment is the most effective parameter for organizational culture in the construction industry of Pakistan with the value of Importance Index (II) of 0.809917. Followed that the 2nd most effective parameter of organizational culture is Teamwork with the value of Importance Index (II) of 0.792396. The 3rd most important parameter if organizational culture is Participation with the value of Importance Index (II) of 0.745785, after that the 4th important parameter of organizational culture is Core values with the value of Importance Index (II) of 0.745785, following by 5th most important parameter of organizational culture is Resources with the value of Importance Index (II) of 0.730248, at the end the last 6th important parameter is Goals, objectives, and vision with the value of Importance Index (II) of 0.730248.

Table 5: Project Success criteria

S. No	Parameters of Project Success Criteria	Relevancy Level (AI)	Significance Level (AI)	Importance Index (II)	Rank
1	Cost of project	0.927273	0.909091	0.842976	1
2	Time of the Project	0.909091	0.872727	0.793388	2
3	Performance of Project's Team	0.872727	0.836364	0.729917	3
4	Safety measurement	0.836364	0.872727	0.729917	4

From the table 5, it can be identified that the cost of project is the most effective criteria for project success in the construction industry of Pakistan with the value of Importance Index (II) of 0.842976. After that the 2nd effective Criteria of project success is time of the project completion with the value of Importance Index (II) of 0.793388. After that 3rd important Criteria of project success is performance of projects team with the value of Importance Index (II) of 0.729917, and the last 4th criteria of project success is safety measurement with the value of Importance Index (II) of 0.729917.

5. CONCLUSIONS

This study was aimed to identify the importance level of the parameters of organizational culture and project success criteria in construction industry of Pakistan. This study was achieved by interviewing 11 experts which were engaged in different projects representing contractors, clients and consultant. According to data from experts the most effective parameters of Organizational culture are Commitment of employee with organization, team work with in organization, participation of employee in different tasks to achieve goals of organization, Core values, resources and the last effective organizational cultural parameter wereGoals, objectives, and vision of organization. While the most important criteria for project success were identified as Cost of project, Time of the Project,Performance of Project's Team and in the end last important project success criteria is Safety measurement, by proper utilizing and controlling of these criteria's a probability of project success can be achieved.

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