

The Appropriateness of Organizational Structure for Project Performance: An Exploratory Study of Public Sector Organizations in Sri Lanka

Gayana Bandara^{1#}

^{1#}Department of Business Management, SLIIT Business School, Sri Lanka Institute of Information Technology, Sri Lanka, gayana.b@slit.lk

Abstract - The objective of this paper is to explore the most appropriate type of structure that can improve project performance of public sector organizations in Sri Lanka. The study utilized the qualitative approach conducting ten structured interviews with project management administrators in the selected five public sector organizations and performing thematic analysis on the coded responses. According to the findings, of the five types of structures; functional, weak matrix, balanced matrix, strong matrix and projectized, strong matrix and projectized structures are advantageous to achieve project scope, time, cost, and customer satisfaction. Hence, the senior authorities at Sri Lankan public sector organizations must take actions to revise their existing structure into a strong matrix or projectized structure for achieving eminent project performance by fulfilling project scope, time, cost, and customer satisfaction.

Keywords: Balanced Matrix Structure, Projectized Structure, Project Performance, Public Sector Projects Strong Matrix Structure and Weak Matrix Structure.

I. INTRODUCTION

Organizational structure plays a decisive part in achieving project success on an international scale. The structure of an organization can considerably affect its capability to plan, operate, and fulfill projects productively (Klessova *et al.*, 2020). The significance of organizational structure for project management is globally recognized, as it supports to allocate resources, maintain communication among project team members, make appropriate decisions, and enhance overall project performance (Sarhan & Dulaimi, 2022). Realizing these universal dynamic forces is critical for a thorough investigation of the appropriateness of organizational structures for project performance in the setting of Sri Lanka's public sector.

In Sri Lanka, the significance of organizational structure in the sphere of project management is further highlighted. This country deals with specific encounters and prospects in managing projects, especially within the public sector (Perera *et al.*, 2021). The appropriateness of organizational structures is predominant in this setting since projects embrace various sectors, such as infrastructure development, healthcare, education, and public services (Aturupane *et al.*, 2014; Ilangakoon *et al.*, 2022; Manoharan *et al.*, 2023). The historic, cultural, and controlling factors in Sri Lanka model its organizational structures, and their association with the unique requirements of altered projects can extensively affect their outcomes (Nagirikandalage & Binsardi, 2017). Henceforth, identifying the significance of organizational structures for Sri Lankan projects is the initial step for optimizing project performance within this distinct environment.

Sri Lankan public sector projects vitally influence the development and welfare of the nation. They embrace a broad collection of plans acute to the well-being of its citizens (Dissanayake *et al.*, 2021). Nevertheless, public sector projects regularly cope

with exclusive barriers such as budgetary limitations, administrative influences, and amplified public inquiry (Perera *et al.*, 2021). These barriers make it commanding to explore how organizational structures within public sector organizations affect project scope, schedule, cost, and customer satisfaction. By focusing on the Sri Lankan public sector, this research intends to provide intuitions into how organizational structures can be utilized to improve project performance and cooperate for the socio-economic development of the nation.

In Sri Lanka, there are numerous public sector organizations in various categories as institutes, bureaus, authorities, boards, and councils which serve the people in the country by launching different types of projects (*All State Owned Enterprises in Sri Lanka*, 2022). Although the private sector organizations carry out projects very successfully with successful results, the projects of the public sector organizations show slow progress. This is because very few responsible parties have been concerned about public sector projects and recommended new areas for improvement (Dissanayake & Devapriya, 2022). Therefore, it is necessary to consider public sector organizations.

The objective of the study is to explore the most appropriate type of organizational structure to improve the project performance of public sector organizations. This research fills the literature gap of limited studies on the association between organizational structure and project performance in the Sri Lankan context. Though Gunasekera and Chong (2018) have investigated the influence of organizational structure on project performance in Sri Lanka, they have not been able to identify how it contributes for enhancing project performance. Hence, the identification of appropriate organizational structure is crucial to facilitate public sector organizations for executing the project tasks effectively. Hence, the research question of this study is, “What is the most appropriate type of organizational structure according to project actors to enhance project performance at public sector organizations in Sri Lanka?”.

II. METHODOLOGY AND EXPERIMENTAL DESIGN

The research attempted to identify the most suitable type of organizational structure to improve project performance in public sector organizations in Sri Lanka. The researchers used a qualitative approach and performed thematic analysis to analyze the collected data. Also, this was an exploratory study. It consisted of meanings, a concept, a definition, metaphors, symbols, and a description of things. Instruments in qualitative approach such as observation, open-ended questions, in-depth interview, and field notes were supportive in gathering data from respondents. It provided a complete explanation of the research with respect to respondents. Respondent observation and the focused group nature of the qualitative approach built a wide understanding of behavior (Lune & Berg, 2017).

A. The Sample of the Study

As there were five types of structures as functional, weak matrix, balanced matrix, strong matrix and projectized, the study selected five organizations which represented five types of organizational structure. The judgmental sampling method was used here. There were five groups of public sector organizations in Sri Lanka as institutions, bureaus, boards, councils, and authorities. Out of each group, one organization was randomly selected for the sample. The justifications for selecting each organization are given in Table 1 and 2.

Table 1. Study Population and Sample

Population	Sample	Justification
All the institutions	The selected institution (Organization 1)	Employees at Organization 1 shows better involvement in project-based activities than the other existing public sector institutions in the country.
All the bureaus	The selected bureau (Organization 2)	Employees at Organization 2 delivered their services in a project-based approach. This was rare in other bureaus.
All the boards	The selected board (Organization 3)	Organization 3 served the community through its various projects for making its services more successful. Other boards in the country were not keen to utilize the project-based approach.
All the councils	The selected council (Organization 4)	Organization 4 was located at the most socio-economically developed province in the country. Therefore, it could perform projects in a more successful way than other councils. Due to this, the researcher selected this council for the sample.
All the authorities	The selected authority (Organization 5)	Organization 5 provided its services by launching projects. Though other authorities launched projects, project team members did not plan or monitor those successfully same as here.

Source: Author compilation.

B. The Sample Characteristics

Table 2. The Sample Characteristics

Type of Structure	Selected Organization	Characteristics of the Organization
Functional	Organization 1	<ul style="list-style-type: none"> There were functional units under the leader, which were handled by deputy leaders who were specialized in those functional areas.
Weak Matrix	Organization 2	<ul style="list-style-type: none"> The leader oversaw deputy leaders. Deputy leaders coordinated project tasks performed by the staff.
Balanced Matrix	Organization 3	<ul style="list-style-type: none"> The deputy leaders coordinated various projects. The deputy leader in each specialization area worked under the leader of the respective specialization.

Type of Structure	Selected Organization	Characteristics of the Organization
Strong Matrix	Organization 4	<ul style="list-style-type: none"> The deputy leaders did not have authority over projects. The deputy leaders worked under the leader, and they had authority over projects.
		<ul style="list-style-type: none"> Duties of the leader were like the duties of the manager of project managers. The leader could guide the deputy leaders to perform project management activities.
Projectized	Organization 5	<ul style="list-style-type: none"> The leader monitored activities of the deputy leaders. The deputy leaders managed all the projects. They had their own staff to work on projects.

Source: Author compilation.

C. Data Collection

The researcher conducted the research through structured interviews with ten managerial-level employees at the five organizations. In Organization 1, two deputy leaders participated in the interview. They had a vast area of knowledge and experience on projects and how organizational structure affected these projects.

In Organization 2, one of the deputy leaders and the leader contributed to the interview. The deputy leader knew everything about projects implemented by this organization and how organizational structure contributed to project performance. As the leader had a strong connection with deputy leaders, he knew how employees cooperated to plan, implement, and monitor projects.

In Organization 3, two deputy leaders provided support in the interview. They were familiar, knowledgeable, and experienced on projects and appropriateness of organizational structure on project performance. Also, they were responsible for project procurement, coordination, Asian Development Bank projects and planning and design. Thus, they were aware of how organizational structure affected project-related functions.

In Organization 4, the leader and one of the deputy leaders attended the interview. The leader oversaw all the projects and understood the influence of organizational structure on project performance. The deputy leaders had a good realization on procedure of projects from the beginning to the end.

In Organization 5, two deputy leaders provided necessary data during the interview. They coordinated the tasks of project team members. So, they knew how these members committed for project tasks. Also, they were familiar with project performance and the impact of organizational structure on that.

During the interview, the study first gathered details of overall organizational performance. Then, the study collected advantages and disadvantages of existing organizational structures for project scope, time, cost, and customer satisfaction. After

that, the study gathered recommended changes for the existing structures. By analyzing these data, the study could identify the most appropriate types of organizational structures.

III. RESULTS

Thematic analysis was undertaken for the data collected through the structured interviews. Thematic analysis is a systematic coding process which is employed to identify repetitive patterns and main concepts of the collected data (Soldana, 2016). Firstly, data sections related to project scope, time, cost, and customer satisfaction are precisely marked with crisp labels identified as "codes." As the coding process progresses, related codes are clustered together, developing primary themes that summarize common topics. The developed five themes are appropriateness of functional structure for project scope, time, cost, and customer satisfaction, appropriateness of weak matrix structure for project scope, time, cost, and customer satisfaction, appropriateness of balanced matrix structure for project scope, time, cost, and customer satisfaction, appropriateness of strong matrix structure for project scope, time, cost, and customer satisfaction, and appropriateness of projectized structure for project scope, time, cost, and customer satisfaction. These themes are advanced and evaluated through continuing analysis, and their relationships with the research objectives are repeatedly evaluated. The result is a collection of well-defined themes, each supported by relevant interview quotes, which jointly explain the impact of organizational structure on project performance at public sector organizations in Sri Lanka.

A. Appropriateness of Functional Structure for Project Scope, Time, Cost, and Customer Satisfaction

Considering functional structure, according to the first respondent and second respondent of Organization 1, the study gained the following responses for the appropriateness of functional structure for project scope. "*Knowledge and experience of members in the existing organizational structure are extremely supportive to manage project scope accurately.*" "*My assigned members of the organizational structure prepare drawings and designs of various buildings while the director and his assigned engineers work on tenders and contract administration.*" These two responses point out that the knowledge and experience of employees in an organization with a functional structure facilitates the management of project scope properly. The study gained the following response for the appropriateness of functional structure for project time.

"Since there is a smaller number of staff members and divisions, each member has a heavy workload which causes high stress among them. Hence, they take a lot of time to complete various project activities." According to this response, the lack of staff members and divisions in the functional organizational structure causes a heavy workload for the existing employees. This leads to high work stress among them so that they are unable to complete project activities on time. The following responses denote the appropriateness of functional structure for project cost. "*The accountant creates the estimated budget for the project. Hence, the divisional engineer must perform costing activities based on that.*" "*The accountant and his assigned staff members work on different expenses of different projects to make excellent financial progress eventually.*" In line with the preceding responses, relationship of the accountant with the divisional engineers and his subordinates is useful to manage project cost of the organization with functional structure.

The following response highlights the appropriateness of functional structure for customer satisfaction. *"To get the result of some building construction or repairing projects, our beneficiaries must wait for more than five years. This causes customer dissatisfaction, which is a huge disadvantage of this organizational structure for us."* This response reveals that improper time management leads to customer dissatisfaction as the beneficiaries have to wait an extensive duration to witness the outputs.

In summary, the exploration of the functional organizational structure stresses its appropriateness in managing project scope and cost. However, its pertinence for managing project time and improving customer satisfaction is relatively limited.

B. Appropriateness of weak matrix structure for project scope, time, cost, and customer satisfaction

Considering the weak matrix structure, according to the first interviewee and second interviewee of Organization 2, the study gained the following responses for the appropriateness of weak matrix structure for project scope. *"The deputy general managers and their assigned staff members do not have the required skills and training to manage project scope though they are supposed to work on different projects."* *"As deputy general managers and their employees do not have suitable competencies to manage projects, project scope is never fulfilled properly."* The above response declares that weak matrix structure is a challenge to manage project scope because employees do not have suitable competencies, skills, and training to handle scope properly. The following responses are related to the appropriateness of weak matrix structure for project time. *"The existing organizational structure has been supportive to fulfill project activities on time because of the contribution of employees."* *"Due to the commitment of employees, we have been able to complete projects within the agreed period."*

The above responses indicate that a weak matrix organizational structure is appropriate to manage project time due to the contribution and commitment of employees. The appropriateness of weak matrix organizational structure for project cost management is signified by the following responses. *"Project team members waste financial resources for many unnecessary expenses so that we had to stop some of the projects."* *"When it comes to cost, those who are involved in projects do not have the ability to handle expenses so that there is always the wastage of financial resources."* These responses prove that project cost management is unsuccessful in the organization with weak matrix structure since employees misuse financial resources causing the projects to be halted.

The ensuing responses relate to the appropriateness of weak matrix organizational structure in the perspective of improving customer satisfaction. *"Inappropriateness of project outputs and outcomes always dissatisfy our beneficiaries."* *"As project team members cannot deliver results of projects with good quality, they cannot satisfy beneficiaries."* These responses demonstrate that depraved quality and inappropriateness of project outputs and outcomes lead to customer dissatisfaction in the organization with weak matrix structure.

In summary, the exploration of the weak matrix organizational structure exposes a subtle view in the sphere of project management. While it proves its appropriateness for managing project time, its effectiveness in managing project scope, cost, and customer satisfaction is observed to be needing.

C. Appropriateness of Balanced Matrix Structure for Project Scope, Time, Cost, and Customer Satisfaction

According to the first and second interviews at Organization 3, the study gained the following response for the appropriateness of balanced matrix structure for project scope. *“The present structure is suitable for project monitoring.” “The present structure is an advantage for project scope because we can plan, implement, and monitor projects in an efficient way because of the work breakdown structure in the existing organizational structure.”* These responses express that the balanced matrix organizational structure is appropriate for project scope because of its contribution for planning, implementing, and most importantly monitoring projects with the support of the work breakdown structure in the organizational structure.

The subsequent responses embody the appropriateness of balanced matrix organizational structure in elevating project time management. *“We can’t always complete projects on time due to the strong effect of environmental factors and other external factors. Project director must be flexible to perform project activities with excellent time management. This depends on his personality and not on organizational structure.” “This structure is not suitable to finish projects within the agreed timeframe due to its massive size and long communication channels. Therefore, there is the highest possibility of happening delays in project activities.”*

Responses divulge that balanced matrix organizational structure is inappropriate for time management as project team members can successfully manage time through the skills of project directors, and the structure is devoid of impact in this context; moreover, this type of structure is inappropriate for managing project time due to its substantial size and the existence of extensive communication channels. The preceding responses provide an exploration of the appropriateness of a balanced matrix organizational structure for managing project costs. *“This structure is not useful for cost controlling. When we want Rs. 10 million for a project and if we do not spend those Rs. 10 million, there will be issues like stopping of work, slow performance of contractors and helplessness of project director without cash. Though the organizational structure gives a small support to solve these problems, it cannot be a driving force.” “To manage expenses and minimize finance wastage, the organization fights with other factors such as political influence and personality of project team members. But organizational structure has never been able to cooperate here.”*

According to the above responses, balanced matrix organizational structure cannot be a driving force for project cost management since there are internal and external factors that affect project cost management. The following responses are related to the appropriateness of balanced matrix organizational structure for customer satisfaction. *“When it comes to a project, we perform a demand survey in the beginning. Then, the project is implemented to meet that demand. We use the theory of demand vs. supply to evaluate whether we can satisfy the demand. But the structure does not have a big effect on this.” “This structure causes the delay in achieving project outputs because of the complexity of our communication channels. So, our structure is not suitable to delight customers.”* The above responses express that balanced matrix structure is unable to assist in gaining customer satisfaction because customer satisfaction is gained by the organization’s own mechanisms. Also, the constant delay in completing projects frequently disappoints the customers of these organizations.

In summary, though balanced matrix organizational structure is appropriate in managing the project scope, it has proven to be inappropriate to manage project time, cost, and customer satisfaction.

D. Appropriateness of Strong Matrix Structure for Project Scope, Time, Cost, and Customer Satisfaction

According to the first interview and second interview at Organization 4, the study gained the following responses for the appropriateness of strong matrix structure for project scope. *“Because of the involvement of employees based on the organizational structure, we can complete the project tasks successfully.” “We assign employees for the different roles in the projects based on our organizational structure. So, this structure helps us to perform activities of project planning, implementing, and monitoring properly.”*

According to the above responses, the appropriateness of strong matrix organizational structure for managing project scope can be credited to the dynamic involvement of employees, a trait occurring from the distinct roles in this organizational context. The ensuing responses clarify the appropriateness of strong matrix organizational structure for managing project time. *“This structure helps to reduce time for completing a project.” “We can finish project activities on time without delay with our current structure.”*

These responses confirm the proclamation that strong matrix organizational structure excellently subsidises to project time management through the decrease of project completion time and the deterrence of delays, expedited by the energetic involvement of employees in project activity implementation.

The following responses show the appropriateness of strong matrix organizational structure for project cost management. *“Since we assign employees as project team members based on the hierarchy in the organizational structure, the relevant team members help to identify whether there is an excess amount of funds allocated for a project. Hence, we can avoid the fund wastage by removing the excess amount and allocating the relevant amount.” “As we allocate suitable team members for cost management, there is the minimum possibility for occurring wastage of funds.”*

These responses prove that strong matrix organizational structure is appropriate for project cost management, as it encourages dynamic engagement of many employees in fund allocation, thus leading to the avoidance of financial waste. The following responses are related to the appropriateness of strong matrix organizational structure for customer satisfaction. *“When it comes to customer satisfaction, relevant project team members go to the field and communicate with beneficiaries. Hence, they can get to know whether customers are satisfied or not about projects.” “Moreover, our assigned members interact with beneficiaries from time to time to get their response about the progress of projects.”*

These responses exemplify that strong matrix organizational structure grips the prospect to assure customer satisfaction, as it has been precisely designed to allow project team members to conduct field visits and engross in thorough communication with project beneficiaries, thereby offering an opportunity for them to explore and improve customer satisfaction through unswerving beneficiary collaboration.

In summary, strong matrix organizational structure is appropriate to manage project scope, time, cost, and customer satisfaction since organizations with this type of structure inherit the capability to fulfill requirements of the four project constraints.

E. Appropriateness of Projectized Structure for Project Scope, Time, Cost, and Customer Satisfaction

Considering projectized structure, according to the first interview and second interview at Organization 5, the study gained the following response for the appropriateness of projectized structure for project scope. *"We can gain 90% success of project scope management with the present structure because of the harmony among different sections."* *"As we have prepared an action plan and a procurement plan, we can complete project scope with the influence of those plans."*

These responses stress that projectized organizational structure is competent in project scope management due to the consistent arrangement of various sections within the structure. This consistency expedites the development of sturdy action plans and procurement tactics, cooperating to the thriving management of project scope. The appropriateness of projectized structure for project time management is given in the following responses. *"Before launching the project, we get the estimated period of the project from the chief engineer. Hence, we sign the agreement for that period so that the implementer must finish it within that period. In case he cannot complete it within that period, the general manager will lengthen the time within a reasonable ground with the approval of chief engineer, executive engineer, and deputy general managers."* *"We sign agreements which include specific timeframes before launching projects so that we should complete projects within those timeframes."*

These responses disclose that the projectized organizational structure is appropriate for project time management, as it assures the involvement of qualified team members who can determine the projected timeline before project initiation and then manage project time based on the original agreement signed at the project's beginning. The subsequent responses show the appropriateness of projectized organizational structure for project cost management. *"When it comes to project cost management, we will identify the total expenses of the project at the very moment we identify the project. Then, we perform project tasks based on that amount."* *"This structure is advantageous to manage project cost. Deputy general managers receive the estimate that includes total expenses from the general manager during the initial stage of the project. This helps them prepare the relevant amount of finance from the beginning."* These responses interpret that the projectized organizational structure is appropriate for managing project costs, as its members obtain inclusive cost information prior to project implementation.

The following responses denote the appropriateness of projectized organizational structure for customer satisfaction. *"We have established the planning section to study about the beneficiaries and provide necessary information."* *"When it comes to customer satisfaction, our planning section involves communicating with beneficiaries to identify their needs and requirements. Therefore, we can plan, implement, and monitor projects to delight beneficiaries up to the peak level."* These responses prove that projectized organizational structure is appropriate for improving customer satisfaction since this organizational framework is favourable for establishing committed units to acquire beneficiary information and fulfill their unique needs and requirements.

In summary, projectized organizational structure is appropriate for project scope, time, cost, and customer satisfaction since this type of structure is also capable in managing all the four project constraints.

III. DISCUSSION

Fuller (2019) expressed that functional structure was suitable for software project tasks such as software engineering, design, and product management. But cross-functional teams showed counter-productive behavior due to the over-arching functional structure of the organization. Eriksson *et al.* (2020) revealed that organizations could manage various activities with the functional structure and high competence of employees. This aligns with the findings of the current study, which points out that the knowledge and experience of employees help complete project tasks properly, but they are not productive due to the work stress caused by the heavy workload.

According to the Project Management Institute (2017), weak matrix organizational tasks were divided into groups based on the job functions. Project manager had low authority, continued the work as a part-time employee, and acted as a coordinator so that it was challenging to perform project tasks properly. The current study also describes that the weak matrix organization is disadvantageous for project scope so that the tasks cannot be completed properly. According to the past literature, the weak matrix organization consisted of limited resources, part-time project management administrators, and a functional manager who handled the project budget so that it was difficult to manage project costs properly (Project Management Institute, 2017). The current study also proves that the weak matrix organization cannot manage project costs since employees do not have adequate skills and training for that.

Bestowing to the previous literature, balanced matrix organizational tasks were divided into groups based on the job functions. Project manager had low to moderate authority and was involved in the project as a part-time member but had more ownership than a coordinator so that the project tasks could be performed in a better manner (Project Management Institute, 2017). The current study also agrees with the past literature because the balanced matrix organization facilitates project planning, implementation, and monitoring and manages project scope in a perfect manner. The preceding literature also revealed the low to moderate resource availability, part-time project management administration, and the project budget managed by both functional and project managers which was supportive for project time and cost management (Project Management Institute, 2017). But the current study disagrees with these since the balanced matrix structure is not useful to manage project time or cost in the context of Sri Lankan public sector organizations.

Strong matrix organizational managers' familiarity with coordination, knowledge sharing, and conflict management provided them with high confidence for managing challenges in complex associations (Kerzner, 2017). This finding fully agrees with the current study, which justifies that a strong matrix organization supports managing project scope due to the high involvement of employees. According to previous literature, strong matrix structure consisted of inventiveness of management, flexibility, shared and independent decision making and believable staff who could satisfy the customers distinctively (Wigert & Sutton, 2023). The current research also describes the flexible staff members in the strong matrix organization who visit the project field and communicate with beneficiaries to ensure customer satisfaction. Furthermore, the past literature implied that activities of functional and project managers affected project performance in the strong matrix organization (Kishore *et al.*, 2019). This totally agrees with the present study, which demonstrates that a strong matrix structure is supportive to

improve project scope, time, cost, and customer satisfaction, which are the determinants of project performance.

According to the past literature, projectized organizations implemented projects successfully with straightforward communication and coordination (Chaudhry *et al.*, 2019), specific process and mechanical, civil, and electrical expertise (Dubber & Pretorius, 2016), and with the contribution of “Project Performance Measurement System” (Duarte *et al.*, 2019). The current study further adds to these indicating that projectized structure can fulfill project scope with the harmony of various employees, action plans and procurement plans, fulfill project time with the support of special agreement, fulfill project cost with the estimate of total expenses, and fulfill customer satisfaction with beneficiary feedback.

IV. CONCLUSION

Theoretically, the objective of this research was to explore the most appropriate type of organizational structure that can enhance project performance at public sector organizations in Sri Lanka. Through the data analysis process, the study could identify the most appropriate types of structures empirically. Data collection process gathered the appropriateness of existing structures for the overall performance, the advantages, and disadvantages of these structures for project scope, time, cost and customer satisfaction, and recommended changes for the structures for better project performance. The data were analyzed through thematic analysis on the coded responses. These practical aspects assisted to achieve the objective of the research. According to the results and discussion, functional, weak matrix or balanced matrix structure is not appropriate for enhancing project performance at public sector organizations. Strong matrix and projectized structures are the appropriate structures for this as these are advantageous for project scope, time, cost, and customer satisfaction. Hence, the senior authorities at Sri Lankan public sector organizations must take actions to revise their existing structure into a strong matrix or projectized structure. They must conduct meetings, make appropriate decisions, and design the new structure by changing various positions and the workload that comes with each position. As a suggestion for future research, it will be more apposite to conduct a similar study in quantitative method by collecting data from a larger sample including project leaders and project team members, for increasing the validity and reliability of the findings.

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