

Identifying sustainability strategies for public sector projects of developing countries

Muhammad Iftikhar Ali¹, Riaz Ahmed²

Abstract

This research explores distinct sustainability strategies to be employed by the project host organizations to meet the integration challenges of sustainable development. Based on the research gap and future directions, this study aims to answer a research question: “What sustainability strategies are associated with sustainable project management for successful projects?”. This exploratory and cross-sectional study collected data through 12 face-to-face in-depth interviews from professionals involved in funding process at Planning Commission of Pakistan. Qualitative analysis was performed using Nvivo-10 software by employing relevant analytical techniques for validation of various generated themes from the transcribed data. Coding nodes, word tree, word tag clouds and tree maps were generated for interpretation of results. Findings suggest six distinct strategies imperative to be used by the project host organizations to support sustainability goals. This study provides implications for practitioners to select, execute, control and deliver sustainable projects in future.

Keywords: Sustainable Project Management, Infrastructure projects, Public Sector Projects

1. Introduction

In developing countries, the integration of sustainability into project management practices has remained a point of interest for the researchers. Projects posed a number of challenges to community and government. Sustainable development is not only becoming a challenge rather it is being acknowledged as a way to sustainability. Ultimately integration of sustainability in projects is getting momentum in developing countries. Strategies help in managing sustainability in the projects. The project host organizations purposefully utilize distinct sustainability strategies to utilize the opportunities and manage the challenges of sustainability. Moreover, it is required to recognize the role of various strategies in promoting sustainability. Being signatory of Sustainable Development Goals (SDGs); United Nation’s “2030 Agenda for Sustainable Development”, the government of Pakistan has aligned projects of the public sector development program with Sustainable Development Goals (SDGs) and Vision 2025 goals of sustainable development by earmarking reasonable budget allocation of Rs. 2,043 billion. Pakistan has produced planning instruments and policy reform packages for sustainable development in the public sector since the 90s after the generation of medium-term development. Due to governance and planning, concerns and flaws in the evaluation of projects, the governance, and planning for sustainable development have

¹ PhD Scholar, Bahria University, Islamabad. Email: iftikhar.kfp@gmail.com

² Senior Associate Professor, Bahria University, Islamabad. Email: rahmed.buic@bahria.edu.pk

remained primarily insignificant. It would be substantial to investigate the sustainability strategies required for infrastructure sector projects to put the country on a sustainable and high growth trajectory.

It is important to notice that a number of strategies are required in managing the sustainability in the projects, in order to transit towards sustainable project success that is ultimately beneficial for the society. Fundamentally, strategies are referred to as selecting various activities that bring value (Porter, 1996) and direct towards success (Artto et al., 2008). The project-based organizations and project hosts persistently apply distinctive sustainability strategies to apply the prospects and cope with the challenges of sustainability. For successful project management, various actors and their activities play a role in promoting sustainability. Moreover, it is required to recognize the role of various strategies in promoting sustainability in projects (Aaseth et al., 2017). The authors recommended several future directions such as examining the recognized strategies in actual life projects for developing better insight for the adoption of strategies in a diverse cultural and industrial project context. The present study aims to link gaps in research. This article focuses on refining the sustainability strategies espoused by the funding organizations of the project. It aims to identify further possible dimensions and patterns of sustainability strategies in addition to the study conducted by Aaseth et al. (2017). On the bases of research gap and future direction, main research question is articulated as *what sustainability strategies are associated with sustainable project management for successful projects?*

The impact of this study on the prevailing knowledge is developing concepts of sustainability strategies as a construct. That is possible only because of this conceptualization. This research develops a framework clarifying the dimensions of strategies for the project host organizations. The aim of this paper is to uplift understanding into the various patterns and subtleties of sustainability strategies available in literature generally and specifically presented by Aaseth et al., (2017). Moreover, this research addresses construct from a challenging viewpoint by expanding a structure of sustainability strategies' dimension that is perceived adopting project host professionals with a framework that could be useful for establishing enough rules in terms of the establishment of sustainability strategies during sustainable life of a project. This study specifically concentrates on examining the strategies in real-life projects for developing better insight for applicability of strategies in diverse cultural and industrial project context, in response to the future research call of Aarseth et al., (2017). This study focused on projects which are being governed by the Government of Pakistan, who made significant investments towards developing infrastructural facilities. These projects include various stakeholder, involve large funds, they are time-bound ranging from 2 to 5 years, and organizationally or technically complex.

Being signatory of Sustainable Development Goals (SDGs); and the United Nation's "2030 Agenda for Sustainable Development", the government of Pakistan, made all those projects as a visible part of PSDP 2017-18, having identifiable intended tangible outcome relevant to achieving SDGs by 2030 (PSDP,

2018). The government of Pakistan has aligned public sector development program with Sustainable Development Goals (SDGs) and Vision 2025 goals of sustainable development with the huge budget allocation of Rs. 2,043 billion (Government of Pakistan, 2018). Despite huge budget and resource allocation public sector developmental projects' pose delay that include lack of appropriate understanding in top management about project goals, the incapacity of organizations in completing projects environment-friendly, lack of interest and frequent changes in top management. Project completion reports highlighted governance, management and capacity issues as major factors contributing to project failure (World Bank, 2017; ADB, 2018). In Pakistan, most of the projects under Public Sector Development Programs (PSDP) are unable to end successfully and would continue a continuous cause of exploitation as the poor governance, and inability on the part of the apprehensive organizations that stemmed in deferrals and cost invades (PAC, 2017). There is a need for comprehensive research that would identify sustainability strategies for successful PSDP projects.

This article views the sustainability of projects with the lens of stakeholder theory. Moreover, research design is discussed followed by the data analysis. Further, in the section of the discussion, sustainability strategies framework is related to stakeholder's theory that reflected applied repercussions and probable guidelines for future research.

1.1 Problem Statement

The emphasis of projects has moved from product manufacturing to value creation, but still, there is a visible decline in project success (Standish Group, 2016). It is essential to consider project outputs and outcomes along with contribution to sustainable development (PMI, 2016). To overcome success issues and achieve sustainable project success, projects require various strategies to manage project sustainability, for conducive sustainable development and increasing shareholder value. Moreover, understanding the impact of various strategies on promoting sustainability is required (Aaseth et al., 2017). PSDP projects success rate is declining due to incapacity of project host organizations in Pakistan which pose challenges for sustainable development. To contribute towards the sustainable development in Pakistan there is a need to identify the project sustainability strategies required for the infrastructure projects of PSDP.

1.2 Objectives of the study

The objectives of the study are:

1. To identify sustainability strategies required for the project success of Public Sector Development Programs
2. To develop a framework of sustainability strategies for enhancing performance of project host organizations.

2. Literature Review

In developing countries projects considerably contribute to the growth of the local industry in the countries they are executed (Aarseth et al., 2011). Sustainable development is one of the major challenges which are posed by the projects to the society and local governments. However, to incorporate sustainability principles into policies and activities is rising in the organizations (Labuschagne and Brent, 2005). There is a need for such strategies, which can help the actors like government, corporations and organizations to develop and implement projects without bargaining the resources of future generations. Sustainability strategies are the policies focusing on the fulfillment of sustainability linked goals and deal exactly with challenges and prospects of sustainability. The sustainability strategies could be adopted by host organizations. The host organizations adopt distinct sustainability strategies to rise the optimistic role of the project and reduce the negative impact of the project. Aarseth et al., (2017) mentioned the overall five sustainability strategies adopted by host organizations. There are number of sustainability strategies obvious and are features in former researches of project sustainability however are not scientifically organized. Project host organizations are to define sustainable project policies by developing laws, regulations, strategies, and procedures to upkeep sustainability, and further influencing the sustainability of project practices through sustainable project practices. Mutually project organization and project host both can include sustainability-promoting factors in project organization via promoting skills and capabilities and including establishments and non-governmental organizations' representatives to turn as acceptability performers. Sustainability competencies could be developed at the project managers' levels and at governmental and general public level as well. Emphasize of sustainability strategies in (PPM) project portfolio management refers to selection of sustainable projects for funding, approval, and execution. Based on extant literature review, several strategies are summarized in Table 1.

Table 1: Summary of Literature on Sustainability Strategies

Strategy	Author	Focus
Setting policies and developing awareness	Bossink, 2002; Ross et al., 2010; Block and Paredis, 2013; Aarseth et al., 2017	Defining sustainable project policies by developing laws, regulations, plans, and guidelines to support sustainability. Promotion of awareness of sustainability in projects amongst top management of project host organization
Influencing project practices	Aarseth et al., 2017; Bossink, 2002; Jaillon and Chi-Sun, 2010;	Supporting the incorporation of sustainability into project practices
Sustainability-promoting actors	Genus and Theobald, 2015; Ross et al., 2010; Yunus	Including sustainability-promoting factors in project-based organization and as well as

	and Yang, 2014; Aarseth et al., 2017	authorities and NGO legislatures to act as acceptability performers.
Developing Competencies	Hwang and Ng, 2013; Martens and Carvalho, 2016; Tabassi et al., 2016; Aarseth et al., 2017	Sustainability competencies could be developed at project managers' level and at governmental and general public level as well.
Portfolio management	Sandoval et al., 2006; Zhang et al., 2015; Aarseth et al., 2017	Selection of sustainable projects for funding, approval, and execution.

As a result of extensive literature review, sustainability strategies presented by Aarseth et al., (2017) are shown in table 2.

Table 2: Framework of Sustainability Strategies (Aarseth et al., 2017)

Project Host	Project host and project organization(Mutual)
Sustainability Policies	Sustainability promoting actors
Influencing sustainability of project practitioners	Sustainability competencies
	Sustainability in Project Portfolio Management

The literature presented in this article about sustainability strategies for sustainable project success deduced these indicators by changing into 'lists' of sustainability strategies which probably lead to improved project results in terms of project sustainable management. As per gaps highlighted in the previous research, there is a need to expand the framework of sustainability strategies of project host organizations. This framework could be valuable for project directors of project host organizations and their consultants in developing, implementing, and appraising sustainable projects without compromising the future of our generations.

3. Research Methodology

The current research identifies one theoretical approach that is found to be helpful for addressing research gaps, guiding methodological approach and for further sustainability strategies' literature in general. Table 3 connects Stakeholder theory with the current research gaps and summarizes the implications for sustainability strategies.

Table 3: Research gap and implications for research

Stakeholder Theory (Freeman, 2002)	
Research Gap	Implications for Research in SS & PS

<p>Addressing the gap</p> <ul style="list-style-type: none"> - To what extent sustainability strategies of state organizations, and commissions being adopted and useful for project sustainability management. - How official and technical settings clarify, form, or constrain the various sustainable strategies. - What more fine-grained identification possible sustainability strategies of project host organizations? 	<p>The stakeholder theory argues that</p> <ul style="list-style-type: none"> - In the traditional view, organizations mainly prefer increasing shareholders' wealth rather at the expense of society's and stakeholders' interests. While stakeholder theory looks contrary to this view of the organization - Few business decision-making control and welfares should be taken away from shareholders and given to stakeholders - Project host organizations may consider stakeholders' interests for successful implementation of triple bottom line perspectives of sustainability management and increasing the rate of project success.
<p>The theory allows for identification of various sustainability strategies of project host organizations, which are rational, guided by conscious motives or implication, based.</p>	

3.1 Research Design

3.1.1 Qualitative Research Design

The research design of the study is cross-sectional. Such a study which is exploratory study and illustrating on a qualitative interpretivist method was considered suitable to achieve the research aim of gaining a deeper understanding of the adoption of sustainability strategies for project success in general and its practical implication through personal interviews. In qualitative research it is common that participant involvement, data collection, and its analysis occur simultaneously. In this research QSR Nvivo (Gibbs, 2002) was used for handling and coding the data collected in terms of transcripts of interviews. As the study is exploratory in nature, all the transcripts and data were analyzed through qualitative content analysis (Miles et al., 1994; Priest et al., 2002).

3.1.2 Data Sample and Data Collection

Since our focus was on the project host organization, we selected Planning Commission of Pakistan where several levels of management plus top management answerable for corporate procedure and policy. The study sampled one project director and senior official as participants from each of the six infrastructure projects of the Planning Commission for interview. In total 12 respondents participated in the interviews. The job title of the respondents are Project Director and Project Chief; 3 females and 9 males. The sample was nominated persistently to guarantee exemplification from the respective project. .

3.2 Procedure

Contact details and email addresses of the project managers were collected from the official website of Planning Commission. Invitations to participate in the interviews were forwarded to their email addresses and personal sitting sessions were scheduled via telephonic appointment. Involvement in the study was on a volunteer basis and privacy was guaranteed. The interviews, which went around 60 to 90 minutes, comprised of questions with open-ended nature with more penetrating to elucidate or succeed answers. Contributors' answers were taped and validated prior to finishing the meetings. Ten semi-structured interviews done in-person meetings and sessions; while 02 interviews were done online because non-availability of Commission members as they were on long leave. The online participants specified they did not feel any issue in comprehending the items of the interviews.

3.3 Data Coding and Analysis

The tapped interviews were converted into the transcribed form. The interviews incorporated in NVivo-10 for storing, managing and analyzing the data. The coding of transcribed text was done by a three-stage procedure; it includes open, axial and selective coding (Neuman, 2003). In the first stage, open coding began with a detailed evaluation of the transcription. During this procedure, patterns were identified, the full data was prepared into theoretical groups and evolving themes were then settled until then each interview had been appraised and done coding. Demographic information was also given to each member at this step, memos covering added ideas or opinions regarding the interview.

The following step was axial coding that evaluates the preliminary themes combined and settled with alike themes gathered. Furthermore, one main class was chosen under that other connected topics converted subthemes. A concluding review i.e. selective coding finished the coding procedure with any discrepancies or overlying themes recognized and distinguished through associating and antagonizing extent of settlement between contributors' answers to confirm the arrangement.

4. Discussion:

The results of the analysis recognized one main theme and six subthemes. The main theme was categorized as "Sustainability Strategies", which encompasses six subthemes including awareness about sustainability, sustainability policies management, influencing the sustainability of project practices, inclusion of sustainability promoting actors, developing sustainability competencies, sustainability emphasis in project portfolio management. These six subthemes of sustainability strategies are in line with the literature review-based framework presented by Aarseth et al (2017). This research identified and added "sustainability awareness" as a sustainability strategy in the previous literature (Block and Paredis, 2013; Jaillon and Chi-Sun, 2010; Yunus and Yang, 2014; Martens and Carvalho, 2016; Zhang et al., 2015) of sustainability strategies required for sustainable project success. A summary description of subthemes along with short examples of verbatim narratives are shown in Table 4.

Table 4: Major themes and sub-themes

Main Theme: Project Sustainability Strategies		
“Sub Themes”	“Summary Description”	Examples of sustainability strategies: Illustrative quotes
Awareness about project sustainability	Promotion of awareness of sustainability in projects amongst the top management of project host organization	<i>The project host organization cannot give priority to the sustainability in project management until unless the decision making and policy-making authorities get awareness about the importance of sustainability in project management</i>
Sustainability policies management	Defining sustainable project policies by developing laws, regulations, plans, and guidelines to support sustainability	<i>In developing economies like Pakistan, we see that in the application and control of understanding of the sustainability rules and ideas in rehearses is a big challenge due to lack of policies, laws, and guidelines for promoting sustainability. Environmental, social and sustainability Impact Assessments (EIA, SIA, and SA) are important dimensions of sustainable policies.</i>
Influencing sustainability of project practices	Supporting the incorporation of sustainability into project practices and technical systems	<i>Our projects lack sustainability in projects due to lack of technical solutions, e.g. waste management systems and ecological management systems etc. There is a need to incorporate sustainability through such project practices</i>
Inclusion of sustainability promoting actors	Including sustainability-promoting factors in project-based organization and as well as authorities and NGO legislatures to act as acceptability performers.	<i>It is routine here that the clear structure of the project and the relationships with the organization were well demarcated. There is a strong convention in managing projects and accomplishing goals.</i>
Developing sustainability competencies	Sustainability competencies could be developed at project managers' level and	<i>Host organizations may instrument training and teaching in numerous sustainability matters, covering corporation directors as well as</i>

	at governmental and general public level as well.	<i>administration workforce and the community.</i>
Sustainability importance for PPM	Selection of sustainable projects for funding, approval, and execution.	<i>Portfolio selection is one of the major steps in a method to assimilating sustainability concerns into project management. Selection of projects at the end of project host organization must be rational in terms of community ecological and economical sustainability</i>

Text Analysis feature of NVivo-10 identifies themes and explores the narratives collected from the respondents. The word tag cloud and word tree-maps are the results of the text search query, used for getting themes, exploring participants' responses and discussion about a specific concept. These features were used to identify the themes of sustainability strategies from the transcribed data. The illustrative graphs show the most repeated and emphasized themes that arose from the interviews of the participants. Figure 1 illustrates the Word Tag Cloud presenting various themes in multiple sizes according to the frequency of their repetition in the interviews. The bigger size of the themes shows the greater repetition frequency in the narratives of the respondents. The illustrative graph is beneficial for thematic analysis as it highlights major themes including "awareness", "policies", "practices", "actors", "competencies" and "project portfolio management".



Figure 1: Word Tag Cloud

The main category of sustainability strategies of project host organizations and six sub-themes shown in Figure 2, during the investigations to answer the research question of this study; i.e. *What sustainability strategies are associated with sustainable project management for successful projects?*

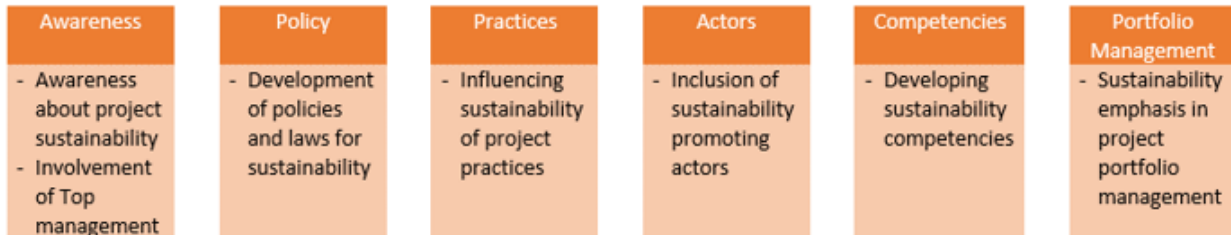


Figure 3: Subthemes of Sustainability Strategies

The identified six subthemes of sustainability strategies are discussed briefly in light of interview narratives of the respondents. The study identified following sustainability strategies required for the sustainable success of the infrastructure projects of PSDP.

4.1 Awareness

Mostly interviewees of the project host organization emphasized that there is a need to develop and spread awareness about project sustainability in project host and project organizations as well. The top management of the project host organization may have clear vision, priority, and involvement towards spreading sustainability awareness.

4.2 Policy

According to the respondents, another strategy of project host could be the development of policies and laws for sustainability implementation in the projects. The state agencies and government organizations may have guidelines to incorporate sustainability in the projects.

4.3 Practices

Influencing sustainability of project practices in terms of technology and new requirements. Such practices are required to be incorporated in the project practices which are linked with sustainability e.g. waste management systems etc.

4.4 Actors

The respondents of project host organizations believed such actors who promote sustainability e.g. NGOs build pressure on the project host and project organization for promotion and integration of sustainability should be included in the project management system.

4.5 Competencies

It is mutual responsibility of the project host and project organization to develop competencies in the project managers and host organizations officials for promoting sustainability. The training and education could be one of the sustainability strategies to develop competencies in the workers.

4.6 Portfolio Management

One of the important sustainability strategies is emphasizing sustainability in project portfolio management. Project host organizations may go for better selection, implementation and execution of those project which are economically, socially and environmentally sustainable

5. Conclusion and recommendations

Findings of the study based on the stakeholder theory suggest that organizations should consider concerns of shareholders over the stakeholders. The theoretical perspective of the research allows for the identification of various strategies of organization which are rational, guided by conscious motives or implication based. The study focused on the context of sustainability strategies espoused by the host organizations of the projects in the interest of stakeholders rather focus on shareholders' concerns. This study concentrated on activities of the organizations relevant to the success of the projects by following previous studies (Bossink, 2002; Genus and Theobald, 2015; Ross et al., 2010; Yunus and Yang, 2014; Aarseth et al., 2017). Findings revealed that sustainability strategies contain a set of linked activities showed during project life. Though such groups or classes have partly been recognized in other researches, as of now these activities are not been portrayed as a possibly comprehensible and clarified set of interconnected activities that can be recognized and followed through an execution progression.

This research highlights that sustainability strategies are a rare resource in the domains of economics, individuals, communication, attention, expertise, and time which must be controlled while allocating among all the themes pertinent to an organization. There are a number of researches conducted on the sustainability management of projects and project success with less coverage of sustainability strategies. Sustainability strategies need to be adopted by the project organizations according to the circumstances and needs of the society. The current study enhances knowledge while presenting a framework, exploring the application of its proportions, using an integrative lens, assessing sustainability strategies proportions. Adoption of this framework can deliver a better-off and additional clear explanation towards project host organizations' sustainability strategies.

The study offers a comprehensive and clear framework of strategies to the project practitioners for adoption of sustainability strategies in the shape of specific activities and actions. This framework focuses on a useful amalgamation of entwined sustainability strategies. This study reveals vibrant role of project host organizations in project sustainability management. Implementation of strategies in PSDP projects,

project directors and chiefs of infrastructure sector should adopt sustainability strategies in every phase of the project life cycle to develop and complete a sustainable project. The framework can be useful in conversing, scheduling, regulating, and appraising project host organizations in numerous settings.

5.1 Limitations and future directions

The researchers gather data from six projects executing in different kinds of infrastructure sector. Hence, it could not be claimed that the findings have given a comprehensive summary of the matters neighboring sustainability strategies in numerous types of PSDP projects of Pakistan. Notwithstanding the over-all agreement on the significance of sustainability strategies of the project host organization for infrastructure projects, a complete view of a variety of sustainability strategies that develop this concept has to be studied more. It would be more encouraging to theorize the wholeness, efficiency, and inter-linked strategies. The developed framework can be useful along with few real ideas on how to precisely ensure and efficiently adopt the sustainability strategies for project sustainable management. The current research also opens future research avenues to operationalize the construct of sustainability strategies and their interrelations through quantitative studies. These strategies may be considered for comparison between developing and developed economies through cross-sectional and longitudinal research studies.

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