



## Facilitating the Integration of Sustainability into Project Management through the Project Management Office (PMO)

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### Abstract

*In today's business world, organizations are increasingly seeking sustainable products and services because of rising expectations and increased demand from consumers and stakeholders. This constant pressure compels firms to adopt sustainable business practices, particularly influencing project management standards, methods, and processes where sustainability is desired in addition to traditional project management practices. Sustainable Project Management has evolved as a global trend within organizations. Despite, the crucial role played by the Project Management Office (PMO) in establishing standards and processes within an organization, its role in sustainable project management is still unexplored. Therefore, the purpose of this research paper is to explore and understand the roles and responsibilities of PMO that are essential to achieve the objectives of sustainable project management. As the study has a practical focus and the impact of the Project Management Office (PMO) in sustainable project management hasn't yet been properly investigated, therefore a pragmatic interpretative approach has been applied along with a concept map. Based on the analysis of relevant literature, the responsibilities of a project management office are developed. The results of this study, identified twelve duties of the Project Management Office (PMO) to integrate sustainability elements into the organization's project management practices. Consequently, the study delineates the central role of the Project Management Office (PMO) in an organization's paradigm shift toward sustainable project management practices.*

**Keywords:** Sustainability, Project Management Office, Sustainable Project Management, Green Business Practices

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## 1. INTRODUCTION

In today's modern world, one of the most daunting challenges faced by businesses around the globe is the environmental impact of human activities and their consequences (Briassoulis 2001; Muster and Schrader 2011; Lawrence et al. 2020; Er Kara, Ghadge, and Bititci 2021). In response, environmental sustainability and project management have appeared as a realm with the beginning of the new decade (Armenia et al. 2019). Posed by ecological sustainability, a new paradigm shift is developed, with an alarming concern to adopt a holistic approach that balances the current and future economic, social, and environmental dimensions impacting projects (Molaei et al. 2021). Indeed, it's more of a strategic imperative than merely an ethical one (Algarni et al. 2022; Omamode et al. 2024). Therefore, the transition towards a proactive approach to consider sustainable development in the projects is adopted as an organizational strategy in the business models, processes, policies, and resources by project managers (Shenhar et al. 2001; Baumgartner and Ebner 2010; Armenia et al. 2019).

To adapt this new strategic objective, sustainability, a new field is integrated with project management ensuring the alignment of project planning, resource optimization, procurement, and managerial

decision with the nexus of economic, social, and environmental dimensions, while also prioritizing the best interest of the client (A. J. G. Silvius and Schipper 2014; Govindaras et al. 2023). Moreover, the integration of sustainability into project management supports the achievement of United Nations Sustainable Development Goals (SDG) by enforcing project managers align sustainability targets with project objectives (Zahid, Klungseth, and Andersen 2023; Malik et al. 2023; Dafevwakpo, Amadi, and Anka 2023).

Sustainable Project Management is defined as considering economic, social, and environmental aspects in the project lifecycle including planning, execution, monitoring, and controlling of project deliverables and processes, along with stakeholder's proactive participation aimed at gaining benefits in an ethical and transparent way (Gilbert Silvius et al. 2017). Despite its increasing significance in the research field, the topic remained largely unexplored and is at the very nascent stage. One of the pediment reasons is the inability to quantify sustainability in the deliverables due to a lack of standardized key performance indicators (KPIs) and monitoring guidelines (Omamode et al. 2024).

The development of project management KPIs, monitoring and evaluation standards, and metrics inside an organization is the prime responsibility of the project management office (PMO) (Katunina 2018a; Wedekind and Philbin 2018). The PMO is authorized as a business integrator, negotiator, and developer of standards, procedures, and automated tools aimed to enhance organizational strategy and effectiveness (Braun 2018). Both the project manager and the organization benefit from the support and guidance of PMO by comprehending and implementing professional project management practices, as well as incorporating sustainable business concerns into the project management environment (Ichsan\* and Hamsal

2019; Zahid, Klungseth, and Andersen 2023). The execution of these organizational changes through projects, results in the sustained growth of organizations and society (Hemphill 2013; Dafevwakpo, Amadi, and Anka 2023).

Although adopting sustainable project management practices is one of the most significant contemporary trends in the global project management literature, research in this area is scarce (Lindgren and Packendorff 2006; Aubry and Hobbs 2011; Ichsan et al. 2023). Many researchers & practitioners have identified a gap between sustainable project management standards and the researches that has been published (G. Silvius 2021). A review of the literature indicates that it is pertinent to explore sustainable project management to better identify and understand the role of in project management office (PMO). To our knowledge, the two themes Sustainable Project Management and Functions of Project Management Office (PMO) have been investigated separately, however, only a single paper is available on the integrated theme. Therefore, this paper aims to heed the literature call by answering the research question: How Project Management Office (PMO) facilitate the integration of sustainability into project management in business organizations?

Further, the integration of sustainability into project management practices has significantly increased the roles and responsibilities of the project management office. Therefore, this research paper intends to assist the researchers and practitioners by exploring the unique research area of study, expanding current research, and identifying the additional responsibility of sustainability in the Project Management Office (PMO) to increase organizational effectiveness.

## **2. LITERATURE REVIEW**

### **2.1 Concept of Sustainability**

Sustainability is the capability to survive and utilize the natural resources for the current without depleting the needs of future generations. Over the century, the most difficult political and management task for researchers has been to balance social and economic wellbeing (Dyllick and Hockerts 2002). Carson's book "Silent Spring" acted as an inception point for his environmental and resource conservation concerns (Carson 1962). In 1987, the World Commission on Environmental Development and later in 1992 the Rio Earth Summit promoted the repel effect of three dimensions as economic progress, social well-being, and prudent utilization of natural deposits, and emphasized that these objectives cannot be accomplished without having an impact on the other two (Miaillhe et al. 2019). Due to its wide acceptance, the term sustainable development has evolved into one of the most significant challenges of recent times.

The "Report of the World Commission on Environment and Development: Our Common Future" (1987) stated that "Sustainable development strategy in its broadest framework aims to promote harmony and balance between humans, humanity and environment," and that "Not only economical dimension is measured for development and performance but both social and environmental aspects are considered". This is alluded in the famous book "Cannibals with Forks" authored

by John Elkington as the Triple-P (People, Planet, and Profit). Therefore, the core aim of sustainability is to achieve equilibrium between these three dimensions, economic, social, and environmental sustainability (Elkington 1998). Furthermore, one must not overutilize the renewal rate and acceptance rate of the earth to waste while extracting renewable resources (A. J. G. Silvius and Schipper 2015). In 2001, the Brundtland Commission explained sustainable development as "To satisfy the needs of the current generation without depleting the capability to fulfill the needs of future generations (Yang et al. 2021).

## 2.2 Sustainable Project Management

In the past few decades, sustainability has gained more importance and recognition. Business organizations are under continuous pressure to report and hold themselves accountable for sustainability performance for both stakeholders and shareholders (Goyal, Rahman, and Kazmi 2015). Moehler, Hope, and Algeo emphasized the hurdles and challenges faced by implementing 'sustainable project management' and concluded to delve deeper with an evolutionary or revolutionary approach (Moehler, Hope, and Algeo 2018). Later, the efficiency of sustainable objectives through the development of sustainability tools was identified in urban projects (Banaduc, Mirea, and Draghici 2022). The research focuses on developing deep insight between sustainability and project management and their mutual gain to develop inclusive and green prospects. A few years later, an empirical study was conducted to comprehend the sustainable success of projects through culture, strategy, and implementation of project management practices. In 2021, a comprehensive study of sustainability for concern was conducted in sustainable project management such as (G. Silvius 2021):

- Sustainability helps to form an equilibrium between economic, environmental, and social objectives.
- Sustainability establishes goals for both short and long-term objectives.
- Sustainability develops both local and global strategies.
- Sustainability develops standardization and principles.
- Sustainability develops clear and visible accountability.
- Sustainability help aligns with stakeholder's goals and objectives.
- Sustainability helps in risk mitigation.
- Sustainability helps in eliminating wastage.
- Sustainability is concerned with consuming income instead of capital.

Recently, Malik, Ali, Latan, and Jabbour investigated the impact of green project management (GPM) practices on sustainable competitive advantage impacting the performance of sustainable projects (Malik et al. 2023). It is a multifaceted process, which requires a holistic approach to integrate sustainability at every stage of the project lifecycle (Omamode et al. 2024).

## 2.3 Project Management Office

The Project Management Office (PMO) is a department that encourages the sharing of methodologies, processes, tools, and resources across the firm along with the

establishment of standards related to project management processes (Project Management Institute 2017). It was also defined as a full-time organization that provides administrative, training, technical, and managerial support (Katunina 2018b). Other researchers referred to the Project Management Office (PMO) using terms such as “talent office”, “standard office”, “project office” and “center of excellence” (Salameh 2014). By supporting project managers, project teams, functional teams, and PMO managers can improve the efficiency and effectiveness of organization levels (Oliveira and Martins 2020). It acts as a hub for strategic alignment and implementation across the whole organization (Braun 2018).

## 2.4 Functions of the Project Management Office (PMO)

According to PMI 6th edition of PMBOK (2017), based on the degree of control and functions PMO is classified into three broad categories (Project Management Institute 2017; G. Silvius 2021).

**Supportive PMO:** Giving PMOs the tools they need to perform an advising role on projects, such as models, industry best practices, workshops expert advice from mentors, and knowledge from the project repository. Such a PMO is to serve as a project repository. The PMO merely offers a lower level of supervision.

**Controlling PMO:** PMO management maintains reasonable control and promotes enforcing compliance in several methods. Establishing project management governance structure and using specific templates, softwares, and protocols. Adhering to management frameworks are method to comply with procedures.

**Directive PMO:** By directly managing projects, the PMO takes control. The PMO is responsible for appointing and managing project managers. Project managers are accountable for results to PMO managers. The PMO exhibits a high level of authority in controlling PMO.

## 2.5 Responsibilities of PMO

The responsibilities of PMOs vary widely based on the structure, size, and complexity of the organization and projects. Every business has its unique challenges and based on the issues that need to be resolved, form the basis of the establishment of a Project Management Office (PMO). Although, duties for a PMO are universal and not limited to a particular set of standards, however, few common tasks are often applied across various PMOs.

1. **Standardizations of Project Management:** Procedures, Processes, Tools, and Techniques (Project Management Institute 2017; Sandhu, Al Ameri, and Wikström 2019; G. Silvius 2021; Lobo Mesquita et al. 2022)

2. **Strategic Planning & Implementation** (Braun 2018; Ichsan\* and Hamsal 2019; Fateev and Zaporozhets 2020; Ershadi et al. 2021)

- 3- **Program Management** (Project Management Institute 2017; Braun 2018; G. Silvius 2021)
- 4- **Project Performance Management** (Cao and Hoffman 2011; Warhurst 2002; Project Management Institute 2017)
- 5- **Talent Management** (Baqutayan 2014; Project Management Institute 2017; Mahjoub et al. 2018)
- 6- **Lean Project Management** (Yana et al. 2020; Lobo Mesquita et al. 2022; Zare Khafri, Sheikh Aboumasoudi, and Khademolqorani 2023)
- 7- **Repository Management** (Erway 2012; Fernandes et al. 2021)
- 8- **Innovation and Change Management** (Sergeeva and Ali 2020; Lima, Fernandes, and Tereso 2023)
- 9- **Knowledge Management** (Philbin 2016; G. Silvius 2021; Ali Hadi 2022)
- 10- **Administrative Management & Support** (Braun 2018; Fateev and Zaporozhets 2020)
- 11- **Project Governance and Benefits Realization Management**(Marnewick, Silvius, and Schipper 2019; G. Silvius 2021)
- 12- **Training and Mentoring**(G. Silvius 2021; Ichsan et al. 2023)

A foundation for many may be laid by developing a methodology for managing projects or standards for an organization. This is because "Project management can steadily emerge as a way of life only if organizations follow the standardized model in every project" (G. Silvius 2021).



Figure 1: Illustration of the Potential PMO responsibilities to integrate Sustainability into Project Management

### **3. RESEARCH METHODOLOGY**

The author aimed to provide a comprehensive review of how a Project Management Office (PMO) is helpful in successfully implementing sustainable project management in an organization. As the research literature is still unexplored, the author adopted a pragmatic interpretive approach. In this research approach, the results derived from either or both through observable phenomena and subjective meanings (Martins and Martins 2012). The study, therefore, reviewed and interpreted the definitions and literature on sustainable project management and the roles and responsibilities of the project management office. Consequently, these two themes were merged and guided by rational reasoning.

#### **3.1 Data Validation:**

Subsequent, based on the pragmatic paradigm, the results are evaluated and validated based on “fit” with its purpose of understanding how the facilitation of a Project Management Office (PMO) enables sustainable project management, rather than on “absolute truth” or “true explanation” of the studied phenomenon, as typically pursued in positivist approach (Alvarez-Dionisi, Turner, and Mittra 2016).

Moreover, the study refers to the roles and responsibilities of the Project Management Office (PMO) discussed earlier in the relevant literature as a concept map (Figure 1). A concept map is “a schematic approach for representing a set of concept meanings embedded in a framework of propositions” (Daley 2004). In a qualitative study, this strategy is crucial as it enables the researcher to delve into the underlying meanings (Jose et al. 2010). As explained by Cook and Campbell validity in a given conclusion, inference, result, or proposition whether externally or internally is the best available approximation of truth or falsehood (Cook and Campbell 1979). In this study, internal representational validity is particularly more relevant. Internal representational validity is the degree to which the concept map developed reflects the judgments made while organizing data to produce the conceptual map (Rosas and Kane 2012).

Therefore in this study conceptual model is validated through an analytical approach of the different cognitive structures identified in the relevant literature on how the facilitation of PMO enables sustainable project management that “best fit” to develop a concept map (Figure 1). As the research on the topic is underdeveloped, therefore applying a pragmatic interpretive approach helps understand and interpret the results from both ethical and rational points of view.

## **4 DISCUSSION**

### **4.1 Roles & Responsibilities of Project Management Office (PMO)**

#### **4.1.1 Standardizations of Project Management: Procedures, Processes, Tools and Techniques**

The Project Management Office (PMO) designs and implements methodologies throughout its lifecycle (Wedekind and Philbin 2018). Furthermore, The Project Management Office (PMO) is responsible for enforcing and promoting the developed standards within projects (Hans and Mnkandla 2021). Although these project management organizational standards are logically derived from industry standards, they have often failed to address the sustainability agenda seriously (Daley 2004). Earlier researchers have suggested that models, measurements, and tools using specific templates and procedures are needed to define and quantify sustainability in projects. Additionally, to progress sustainability, Key Performance Indicators (KPIs) are developed to critically analyze, measure, and apply monitoring and evaluation.

Sustainability-oriented standard PRiSM, (PProject Integrating Sustainability Measures) integrates the concept of sustainability into a traditional project management process and provides value maximization (Katsarelis and Adamopoulou 2015). Throughout the project life cycle, particularly at the closure stage of the project, the sustainability objectives are measured and reviewed in the meeting. While sustainable project management focuses on the three aspects of the triple bottom line such as economic, social, and environmental when developing projects, members of Green Project Management (GPM) elaborate and emphasize five components—People, Planet, Profit, Product, and Process.

Several other standards, such as ISO 9001, 14001, 50001, UNE 166002, and OHSAS 18001, incorporate the economic, social, and environmental dimensions of sustainability (Martínez-Perales et al. 2018). The PMO can acquire certification in these standards to embed sustainability practices in their projects.

By implementing the PRiSM model or achieving certification in sustainability standards, PMOs can integrate sustainability aspects into an organization's project management procedures, processes, tools, and techniques. This integration allows PMOs to use these standards as sustainability indicators to measure sustainability performance in their projects.

#### **4.1.2 Strategic Planning & Implementation**

Strategic alignment, or strategy implementation, refers to the execution of these selected strategies. A sustainability strategy integrates profit-oriented goals with social and environmental considerations during organizational activities (Salzmann 2008). Evaluating Internal and external drivers enhances the transparency of corporate sustainability challenges (Arjaliès and Mundy 2013; Zhang et al. 2013) such as reviewing the Carbon Disclosure Project and Global Reporting Initiative and processes of internal sustainability integration. To effectively implement

corporate strategy, various aspects of sustainability must be considered in strategic decision-making (Epstein and Roy 2001; Bonn and Fisher 2011). This integration of sustainability extends beyond strategy into the organization's vision, policy, and culture (Steyn and Niemann 2014).

The Project Management Office (PMO) plays a key strategic role in defining policies, goals, and objectives (Sandhu, Al Ameri, and Wikström 2019). Further, PMO provides value added contribution by achieving sustainability values within the organization through sustainability planning, providing consultation services regarding sustainability, environmental scanning, and ensuring deliverables meet sustainability initiatives (Spalek 2012). PMO Managers can increase the sustainability tendency within projects by getting buy-in from stakeholders and consumers through their participation in in the co-creation sustainability value process (Sandhu, Al Ameri, and Wikström 2019). In addition, a PMO manager can enforce and promote sustainability by developing a sustainable culture and learning, enhancing communication, and selecting business cases of new projects and portfolios on sustainability values.

By implementing these strategies, the Project Management Office (PMO) can significantly contribute to the organization's sustainability efforts, ensuring that sustainability is not just a goal but a fundamental part of the organizational culture and operations.

### **4.1.3 Program Management**

Program management is the process to achieve strategic objectives by managing more than one related projects in a coordinated way. Programs have a broader scope compared to individual projects. Because they are aligned with the organizational strategic initiatives, they are long term and remain in their place (Ershadi et al. 2021). Programs contribute as a smaller parts of larger strategic initiatives and hence endure organizational change and contribute to a variety of targets and goals (Braun 2018). The Project Management Office (PMO) has the opportunity to gain valuable experience through the application of methods in the project's operational management to develop sustainable project management.

### **4.1.4 Project Performance Management**

According to PMI (PMBOK, 6th Edition) “the framework, functions, and procedures of project governance direct the activities of project management to produce a one-of-a-kind product, service, or outcome that satisfies organizational, strategic, and operational objectives” (Project Management Institute 2017). Among various performance, measures cost and schedule are the most effective evaluation measures adopted by organizations (Project Management Institute 2004). However, it is

equally important to consider other variables that add value to the consumers while evaluating project performance (Farris et al. 2006). Recent researches indicate that cost, time, and quality are not the only success criteria that maximize the value

of consumers (Cao and Hoffman 2011). Other measures such as sustainability indicators are incorporated to identify the performance of the project from environmental, social, and economic aspects (Warhurst 2002). Sustainability Performance Management System, identifies Sustainability Performance Indicators to promote sustainability within organizations (Warhurst 2002).

The PMO looks for performance by developing, implementing, and monitoring project management practices in the organization concerned through its function called performance management (Fateev and Zaporozhets 2020). The Project Management Office (PMO) should develop sustainability standards, policies, and instructions to evaluate the performance of the project by developed sustainability criteria (Zahid, Klungseth, and Andersen 2023). Eco Audit, social impact assessment, Global Reporting Initiative, UN Sustainability Indicator, The Columbian Business Council for Sustainable Development (CECODES), Wuppertal Sustainability Indicators, GEMI Primer on Measuring Environmental Performance, NPI Global Warming Indicator, ISO 14000 series are few popular indicators to assess sustainability performance (Warhurst 2002). Executive PMO heads should evaluate various sustainability measures alongside traditional project management practices, particularly after every stage gate review process.

#### **4.1.5 Talent Management**

Talent management is the systematic process to attract, select, engage, retain, and placement of individuals who contribute value-addition to an organization because of their potential or significant position (Baqtayan 2014). The availability of skilled project managers at the right time for the projects plays a significant role in the project's success (Mahjoub et al. 2018).

The primary focus of the Project Management Office (PMO) is to define the role of a project manager (Hans and Mnkandla 2022) and make them available at the right time. With the increasing adoption of project management principles, there is a growing demand for skilled project managers (Mossalam and Arafa 2016). The PMO's role involves (Peris-Ortiz, Ferreira, and Lindahl 2018):

- Identify and develop the knowledge and skills required for the project manager.
- Identify the appropriate individual for the post of project manager
- Identify the appropriate individual for the post of project team member
- Evaluate the performance and provide feedback to the project manager
- Applying necessary adjustments to standards and policies

A Project Management Office (PMO) can facilitate the implementation of sustainable project management by identifying the motivation drive behind project managers. Self-driven project managers prioritize sustainability because they think it is the right thing to do (G. Silvius 2021). Therefore, a Green Project Manager enhances sustainability by acting as the agent of change by incorporating sustainability efforts, commitment, and resources within the project lifecycle (Carboni, González, and Hodgkinson 2013). Furthermore, they will thoroughly consider and incorporate economic, social, and environmental aspects using measurable standards in the

project.

The Project Management Office (PMO) can promote and advise senior management to conduct workshops on sustainable project management to enable them to have a better understanding and guidance for creating a talent-rich organization.

#### **4.1.6 Lean Project Management**

The lean project management framework is based on three fundamental principles identifying non-value added activities and eliminating waste, continuous improvement, and measuring the progress of value

added activities (Zare Khafri, Sheikh Aboumasoudi, and Khademolqorani 2023). The primary objective of adopting lean project management is to eliminate eight management wastes, namely, 1- transportation, 2- inventory, 3- motion 4- waiting 5- over-production 6- over-processing 7-defects, and 8- non-utilized resources or talent (Ohno and Bodek 2019). As a result, lean project management has a high capability to respond to change and create desired customer value through continuous improvement. By integrating the concept of continuous improvement in business processes Lean methodology can solve global environmental sustainability challenges (Chiarini 2015). Through Qualitative and quantitative analysis, Lean provides tools to measure both productivity and environmental performance (Verrier et al. 2014).

Project Management Office (PMO) can facilitate the organization to integrate sustainability by adopting Lean Management principles and Lean Management tools namely, Just in Time (JIT), Total Quality Management (TQM), and Total Productive Maintenance (TPM) to enhance the sustainability performance of the firm (Lobo Mesquita et al. 2022). Researches indicate that non-compliance with changes in business environments is one of the major causes of Project Management Office (PMO) failure. Therefore, Lean Methodology is a promising sustainable practice that PMOs can leverage to ensure its own feat, as well as the sustainability of the organization.

#### **4.1.7 Repository Management**

Project sustainability is guaranteed by the commitment of partner institutions to develop and sustain their respective institutional repositories (Erway 2012). Current research indicates the significant function of the Project Management Office (PMO) as an organizational department that acts as a repository of learning and knowledge transfer (Fernandes et al. 2021). Therefore, the Project Management Office (PMO) should manage a repository of sustainable practices implemented in previous projects to ensure consistency and commitment to integrate sustainability into project management practices within the organization.

#### 4.1.8 Innovation and Change Management

According to Takacs (2018), change management is a result of innovation management (Ildikó-Csilla 2018). Accelerating innovation improves competitiveness and survival in project based organizations (Ju, Ferreira, and Wang 2020; Sanz-Llopis and Ostermann 2020). Sustainable innovations in particular meet the long-term expectations of consumers and stakeholders by integrating the three aspects of sustainability (Seifert, Kunz, and Gold 2023).

The Project Management Office (PMO) is conceptualized as an integrative unit encompassing innovation groups, processes, and systems (Artto et al. 2011). The Project Management Office (PMO) innovation system guides the project toward success by incorporating innovative strategies (Hobbs, Aubry, and Thuillier 2008; Karkukly 2015) such as sustainability within project parameters. Project Management Office (PMO) plays a crucial role in stimulating innovation through knowledge management and project life cycle, particularly at the front end (Aubry et al. 2010). Specifically, during the project life cycle delivery stage the PMO encourages innovation through information sharing, promoting innovative procurement techniques, and influencing the final approval of project deliverables based on innovation metrics (Sergeeva and Ali 2020). Hence, PMO acts as a stimulator, coordinator, and supporter of innovation throughout the project lifecycle (Sergeeva and Ali 2020).

Incorporating sustainable innovation at different project lifecycle stages allows the Project Management Office (PMO) to drive significant benefits for the organizations. Through sustainable innovation, PMOs can help achieve waste reduction (Ullah et al. 2020), and operational efficiency leading to cost savings, resource optimization, improved quality of deliverables (Severo et al. 2020), and healthier workspace (Ullah et al. 2020). Cost savings, a highlighted benefit, can translate into improved financial

performance through increased revenue and monetary control. It also fosters positive perception among consumers and develops trust and loyalty- innovation (Lima, Fernandes, and Tereso 2023).

Innovation necessitates revising the strategic goals, business vision, and mission and decision-making in the management processes (Pamfilie et al. 2020). Therefore, by integrating sustainability values into the strategic organizational goals, PMO can align sustainable project management with the change management process. However, the Project Management Office (PMO) should process the change systematically following planning, execution, monitoring, and control phases in line with the organizational sustainability strategy. Further, by assisting in the formation of a sustainable innovation strategy PMO can influence important project decisions to drive sustainable innovation successfully in project management practices.

#### 4.1.9 Knowledge Management

Project Management Office (PMO) refers to knowledge management as the implementation of organizational knowledge and information to improve project

management competence and enhance business value with capability (Ali Hadi 2022). Long term objectives can be achieved by aligning sustainability techniques (Frolova, Alwaely, and Nikishina 2021) such as creating, collecting, organizing, using, and exploiting intellectual property and sustainability for competitive advantage (Avotra et al. 2021). A new paradigm shift is geared toward fostering the principles of economic, environmental, and social sustainability (Rampasso et al. 2020).

Organizational learning and development is a nexus between sustainability and waste reduction (Peterson 2009). To adopt sustainability, businesses should adopt a zero wastage strategy (Peterson 2009; Philbin 2016). The Project Management Office (PMO) may assist the organization in learning to integrate sustainability components into project management by adding the assessment indicator of sustainability into project evaluations, reviews, and lessons learned reports.

#### **4.1.10 Administrative Management & Support**

Project Management Office (PMO) is a dynamic organization whose function transforms according to the goals aimed by an organization. Among various functions, PMO performs administrative tasks such as writing, scrutinizing, and finalizing agreements, including arranging administrative start-up meetings (Fernandes et al. 2021). Additionally, the archiving role may be aggregated with a supporting role to foster organizational learning and knowledge management through project documentation and managing contracts (Carboni, González, and Hodgkinson 2013). Furthermore, Enterprise PMO is established for mega projects to systematize the archiving of projects and to promote the adoption of a shared project management methodology (G. Silvius 2021).

Organizations and stakeholders with a sustainability stance seek additional information beyond financial performance indicators on project deliverables (Project Management Institute 2017). Therefore PMO should provide a supportive function by monitoring and assessing the processes and results of projects with sustainability concerns.

#### **4.1.11 Project Governance and Benefits Realization Management**

Benefits acknowledgment or benefits realization management is an integral part of governance because it prioritizes the right projects and secures executive support for them at the right levels (Fernandes and O'Sullivan 2021). Benefits Realization Management, serves both as a method and a discipline for ensuring that an organization's proposed projects adhere to culture and strategy for benefit identification and assessment (Dokhtzeynal and Pakdaman 2020). Integrating sustainability considerations into the organization's strategy and portfolio management methodology drives the identification of project benefits, which are logically reflected in prioritizing business cases (Monteiro, Santos, and Varajão 2016).

PMO can play a significant role in the realization of benefits, for instance through post-project inspections (Fernandes and O’Sullivan 2021). In addition, PMOs can conduct post project reviews upon project closure, which can be used to assess and recognize sustainability efforts. To further demonstrate how project management contributes to revenue generation, the Project Management Office (PMO) should address these concerns strategically. Furthermore, promoting the sustainable development strategy and goals, which are essential to implement and monitor these developments are measured through sustainability indicators or KPIs (G. Silvius 2021). PMO should incorporate non-economic factors into the sustainability development process, considering project managers often pay less attention to sustainability due to the short duration constraint.

#### **4.1.12 Training and Mentoring**

Training and mentoring is a primary function of the Project Management Office (PMO) which aims to empower individuals and provide better understanding and guidance about project management (Hans and Mnkandla 2022). With training, Project Managers can acquire and share information regarding the application of sustainable practices and green methodology (G. Silvius 2021). Its objective is to make certain that all project participants from the senior project manager to the part-time project assistant adopt sustainable project management responsibly and develop a green culture in the modern workplace (Peris-Ortiz, Ferreira, and Lindahl 2018). The PMO's responsibilities in sustainable project management should extend beyond the simple sharing of knowledge and experiences to include direction and advice on how to integrate sustainable development into projects. This would require the PMO to gain specialized knowledge in that field and collaborate with the organization's sustainability experts to have a deeper comprehension of the sustainability implications of different project options. GPM is one of the globally recognized certifications that enable individuals to develop skills, abilities, and knowledge in sustainability and project management. The Project Management Office (PMO) can approach this expert to contribute to the development of these trainings.

## **5. CONCLUSION**

This study delved into the realm of the roles and responsibilities of Project Management Office (PMO) in sustainable project management, which has not received much attention recently. Through a pragmatic interpretive approach, the author aimed to shed light on the idea to better comprehend the topic and open future research avenues for researchers and practitioners. As a result, ten prospective Project Management Office (PMO) duties were identified to include sustainable project management in projects. Despite, the PMO’s roles and responsibilities vary depending upon the needs of the organization, however, the literature has identified a few commonalities that can be shared among firms. To incorporate sustainability into project management, a variety of strategies can be applied to achieve sustainability objectives through these shared roles and responsibilities. This study contributes theoretically by expanding the previous research study (G. Silvius 2021) through the identification of new PMO functions in driving sustainability

into project management namely, Strategic Planning & Implementation, Project Performance Management, Talent Management, Lean Project Management, Repository Management, and Innovation and Change Management. Further, it also gives deep practical insight to PMO managers by identifying strategies and knowledge of sustainable development in the organizations. It is therefore pertinent to highlight that PMOs have the potential to be leaders in this field, but doing so would need them to expand their sustainable project management functions and capabilities. From a policy perspective, this paper contributes to the United Nations Sustainable

Development Goals (SDGs) addressing SDG 13‘Climate Action’, by taking a crucial step towards improving sustainability in project management. Hence as demonstrated in this study, Project Management Office (PMO) can act as a game changer and facilitate the transition to adopt a new paradigm of sustainability in project management, resulting in organizational effectiveness.

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