



# Agile Blueprints: Navigating Project Management toward Sustainable Success: A Comprehensive Literature Synthesis and Managerial Compass

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Received: 10 February 2024

Accepted: 26 April 2024

DOI: <https://doi.org/10.32479/irmm.16151>

## ABSTRACT

This paper is constructed to study the sustainable practices that project managers follow and their contribution to sustainability. This study divides the sustainability section into three pillars (Economic, Environmental, and social). Sustainability is still an emerging concept with multiple interpretations globally. This paper also discusses several scenarios comparing and contrasting those practices to draft suitable recommendations. Moreover, this paper studies the link between sustainability and agility. As this paper is conceptual in nature, only scholarly articles ranging from Q1 to Q4 can be accepted to report findings and critique academically. Primary methods will not be utilized in this paper. As per each contribution the findings are also categorized into three pillars of sustainability. The findings are linked codes to each sustainable practice as cited earlier including agility being an independent variable. The research recommends testing the hypothesis and propositions in case the study develops further. The findings from past literature will be utilized to create critical success factors and recommended models. As this paper is conceptual research, the paper lacks empirical data, and it uses inductive philosophy to create themes and findings.

**Keywords:** Projects, Construction, Sustainability, Agility, Management

**JEL Classification:** M20

## 1. INTRODUCTION

This study includes two major aspects of project management which include the agility concept and the sustainability impacts from their decisions. The link could be made by analyzing secondary data and setting the variables ranging from independent and dependent variables. The researcher aims to state the role of agile project management in sustainable project management. Moreover, the ability to recognize key issues and new technologies recorded in the literature. Furthermore, shedding light on different standpoints of professionals and academics. Each standpoint must be closely analyzed and examined, going back to the literature and methodology administered by peers in the sustainability discipline. A comparative table of global practices and initiatives will be provided including the researcher's viewpoints and discussion

points and agile practices will be recommended and facilitate the sustainability process. The sustainability pillars are set to be the economic, social, and environmental based on (Purvis, et al., 2018).

The researcher will only be permitted to use secondary data that are derived from Q1 and Q2 ranked journals in Project management and sustainability. Q3 and Q4 can also be used if the literature is limited. Primary data collection methods will not be conducted as they will not fit the research requirements for this paper. This paper is considered a literature review with critical analysis. The literature will provide examples of how project management contributes to sustainability and overall then it will focus a part of the literature on the role of agile project management in Sustainability. Firstly, to provide literature and credit the authors that contributed knowledge and theory to both fields if relevant to

the research aim and objectives. Followed by creating awareness among the readers that some authors might have different viewpoints and rationales behind their decisions. Moreover, critiquing and exploring the literature and providing further explanation on how the knowledge could have been interpreted to suit our narrative. Finally, providing a critical analysis of the evidence utilized by the authors and the authors' background.

The role of agile project management in sustainable project management needs to be further studied. The research connects the two variables of sustainability and agility and identifies the link. The concepts of agility and sustainability are new. Although presumed that they are directly related, the studies read and critically analyzed by the researcher didn't prove that point due to a lack of empirical data from international case studies (Miceli et al., 2021). The researcher will pick up studies from around the globe and will define the Critical Success of Factors and provide agility practices that will help reduce the barriers to achieving sustainability. The researcher will use agile practices to fix other issues faced in the literature to create new strategies and claim the CSFs.

## 2. LITERATURE REVIEW

### 2.1. Contribution of Project Management to Economic Sustainability

Al-Marri et al. (2019) have provided an intensive review of the management of CSR through projects by conducting a qualitative data collection method. After conducting personal interviews and applying thematic and explanatory analysis with representatives from various industries such as banking, real estate, government, and other sectors. The findings were that the organizations were involved in CSR more than what is depicted in the literature. The respondents agree that the CSR initiative must be communicated from the strategic level and in a few cases, they believe that the core of the business must be sustainability-oriented. The critic noticed that both authors were engaged in project management-related research in the United Arab Emirates, from Hamdan Bin Mohamed Smart University and The British University in Dubai. Experience in local research increases the relativity of this research as it sheds light on the local. The authors added that formally implementing structured CSR activities can increase profits and mitigate the risks all within the sustainable development goals. Although they urged for further research. The research supports the methodology used for the research as it fulfils the purpose of obtaining quality data. The research provides rich and empirical data on managing CSR through projects. However, this research mentions economic sustainability in a broad sense, the researcher would require more examples on how the profits increase and to widen the scope of research.

On the other hand, Martens and Carvalho (2017) followed a quantitative approach. Before conducting the quantitative research through surveys, the authors viewed the literature with a triple-bottom-line perspective. The result ended up being more economic leaning the first two factors involved attaining a sustainable innovation business model followed by attaining a competitive advantage. These two factors are economic, unlike

the previous research this study elaborated more on economic sustainability. The other factors include stakeholder management and environmental policies. The study already identified four new factors that contributed knowledge to the field and addressed the CSR theorem. The paper mentions that the relationship between project management and sustainability is a new discipline and requires further research, the critic believes that the same topic might use a different methodology by incorporating a semi-structured interview to elaborate further.

Furthermore, the economic factors are still causing barriers to achieve a circular economy (García-Quevedo et al., 2020). Therefore, due to economic risks of scarcity a new economic model for preserving natural resources was designed. However, the practice in the United States was limited due to several barriers to entry. Some barriers are monetary which include high costs, outdated business models, lack of awareness regarding the circular economy and lack of motive to adopt sustainable practices (Guerra and Leite, 2021). The Critic believes that the mixed approach to data collection contributed to the quality of the findings. The researcher also believes that the high costs of adapting ecologically friendly practices in construction will remain a barrier unless strict governmental regulations and fines must be implemented effective immediately. The author proposed education to create awareness. However, the researcher believes that it will be a long process. Educating the public through proper channels will require planning, budgeting, and other resources.

On a different note, Kenya faces slight economic ambiguity when it comes to the costs of landscape materials. The government provides guidelines and a handbook which states the prices of materials. The expenses are decreasing slightly based on the published handbook although it was anticipated earlier that the costs were increasing. The handbook lacks sustainable practices that must be taken into consideration (Tanui and Tembo, 2023). The critic, first realized that the authors used both qualitative and quantitative approaches to data collection both published and unpublished works were cross-examined. The unpublished work causes a rise of concern to the researcher as such practices are monitored in a Q2-ranked journal like this one. Proceeding to the findings, the gap between the anticipated and recorded price will lead to unprecedented costs that can hinder sustainability even if the handbook provides practices to follow. In a developing country like Kenya, the gap between reality and regulation is anticipated by the researcher as proper documentation might not be utilized.

A Russian study was conducted on how migrant workers in projects can achieve economic growth. The findings included that migrant workers could bring a new set of skills, knowledge and experience into construction and projects. The workers can gain higher wages than back home (Elsebaie et al., 2023). The critic believes that with less-costly migrant workers, the expense will decrease, and projects can bring more revenue. The same concept can be traced to as early as the wealth of nations (Gedam et al., 2021). The theories of division of labour and the invisible hand prophecies are still relevant. However, ethically due to the hard labour and less pay, it might not contribute to social sustainability.

Migrant labour is still a controversial topic related to human rights. The critic believes that future studies might reveal more regarding the variables of migrant labour and sustainable development.

## 2.2. Contribution of Project Management to Environmental Sustainability

Mansell et al. (2020) successfully measured whether engineers can deliver projects while keeping the UN sustainable goals (SGDs) under consideration. The researchers used a mixed approach to fill the gap in the literature. The literature provided in their paper suggested that SGDs can't be fully implemented as they will have an inverse relation with the return on investment and blamed the projects with poor investment in infrastructure. The critic noticed that the literature review section showed previous studies with assumed results. To fill the gap in literature mixed approach was utilized. They used a realist evaluation methodology to detect thematic analysis on how engineers can implement SGDs through their projects. The findings are that 87% of engineers are willing to implement UN SGDs in their practice and frustration is shown from lack of implementation. The critic is fascinated by utilizing all three approaches: literature review, survey, and interviews to gather information. The objective was to incorporate the Triple Bottom Line in future projects. The paper is targeting the Triple Bottom line of Economic, Environmental, and social sustainability.

Moreover, Ershadi et al. (2021) introduced their paper by urging construction managers to facilitate project portfolio management practices and tools to help and control all the factors that are included in construction from the budget, risk management, supply chain and the desired outcomes. Ershadi et al. (2021) strongly believe that construction managers must consider factors out of their project scope. Reducing waste and creating a positive environmental impact. The authors emphasized on screen projects and noted down their capabilities and resources to study their capabilities of attaining the business goals and the social development goals. The disclaimer used by the study is from the standpoint of a contractor. The authors aligned their work with the PMI institute and adapted a similar framework. The process involves firstly, the portfolio redefining which a process of setting the directions needed is. Followed by the aligning process where priorities will be set. Authorization and control are an active process that measures the fulfilment of construction indicators. The critic agrees with the author's standpoint and the methodology used in analyzing past research. However, unlike the previous research in this section, the authors didn't expand further on the knowledge.

On the contrary, Kurnaz (2021) has warned his audience of the risky behaviour of greenwashing and green marketing and how large companies related to architecture allocate budgets for maintaining such green certification. Working towards green building certifications such as LEED and BREAAAM are used as methods to show their customer base their dedication to achieving environmental sustainability. Kurnaz (2021) mentioned in his findings after examining each rating system and certification with the aspects that they cover, it is proven that such rating systems put the energy, water and electricity efficiency under consideration including the air quality. Other criteria include innovation, management, and services. The competition to attain

such certifications created a green building industry that will assist in conserving natural resources. The critic believes that the author tried and warn the customer base of greenwashing, but it ended up creating a new green sector of the economy. The critic acknowledged that the author's standpoint is focused on whether these rating systems are legitimate or just a fraudulent scheme to trick customers (Grafström and Aasma, 2021). Furthermore, those rating systems publish their criteria for inspections online so the customers could assess the sustainability.

On a different note, Projects can contribute to a circular economy, several strategies can be put into action. Each strategy is focused on the ecological aims and objectives. Some of these strategies include the reduction of construction waste and the integration of scrap into the building process. Followed by, designing parts that can last long or can be reused. Finally, reusing parts that are replaced (Minunno et al., 2018). The critic believes that the authors constructed a conceptual paper that follows the same methodology as this paper. The literature is chosen to fulfil the research questions and gap. However, for future implications, the critic suggests that each strategy proposed by the author must be tested through experimentation or a trial and error process. This paper satisfies the nature of social science work, but the proposed strategies are scientific and utilize the 3Rs of sustainability (Reuse, Reduce and Recycle). Only after the experiments are published comes the implantation phase.

In Hong Kong, construction of modular construction shifted the initiative to a highly sustainable building sector. Projects that are built off-site and transported to the site through a modular construction system appear to be successful (Wuni and Shen, 2022). The data was gathered by conducting a quantitative method. The data revealed that the success factors are contributed by using an effective and efficient supply chain network, the project and construction managers must be competent and show early commitment. The critic shows how projects can contribute to a circular economy by conserving natural resources and reducing construction waste. Unlike the previous study, this paper is technical and can provide technical guidance. Although, the science of construction is not as deep as is required to be implied in the previous paper.

## 2.3. Contribution of Project Management to Social Sustainability

Yang et al. (2018) discussed in their paper how shareholder management is conducted in mega projects. The authors chose four megaprojects to be described and analyzed. The critic agrees with the choice of the authors, the four projects are Rail, Hospital, a National research centre and a prison. The authors reviewed an interesting selection that might be overlooked by other researchers all four options fit the criteria of megaprojects as the construction costs are over a billion and took a few years to be built, a conservative average of four years. Each project will be a different case. In the first case (Rail), the Stakeholder management plan was not inaction causing a delay in construction. The rationale behind it is that they didn't contact government safety agencies. In the second case (Hospital) by exploring and identifying shareholders, the problems are

minimized. In the third case (National Research Centre), the authors visited nearby universities and conducted semi-structured interviews before the research, the project managers noticed that brainstorming sessions mitigated the risks. Finally, the fourth case (Prison) has built ties with the Ministry of Justice, treasury, and aboriginal communities to seek recommendations on how to serve the prisoners in their facilities (Stanitsas et al., 2021). The fourth case provided graphs that plotted the interests and power in a graph to serve the higher interest and higher power first which is the Department of Justice. The critic agrees with using an experimental approach in assessing the stakeholder satisfaction with the project's success. The critic also urges that the justification behind the publication is reasonable as it compared the outcomes using different approaches hence, an original theoretical contribution.

Similarly, Magano et al. (2021) applied a quantitative approach as a methodology. However, the authors used Ground Theory (GT) a method that uses inductive reasoning to create several hypotheses while collecting data. The authors have found that project managers are aware of the role of projects towards a sustainable society. The literature review section still shows the same economic problem, it showed that there are still concerns regarding a balance between monetary gains and sustainable development. The critic suspected that as it is mentioned in the first section of the literature review. The sample size consisted of project managers presumably practicing and they were asked whether projects can contribute to a sustainable society. The data collection method ended in around a month. The demographic shows that the males lead by 72% of the sample size and 28% are women. The majority hold a master's degree and have an engineering background. The critic realized that these authors showed an initiative in providing demographical data to eliminate any comments regarding biases. The purpose of the paper matches the findings and results, and the structure was easy to follow. The visible demographics of the participants eliminate the biases of the sample.

A study conducted in Rome selected 89 articles from a 450-article pool. The conceptual study studied and analyzed the topic of sustainable project management. Sustainable practices emphasize stakeholder management and engagement (Xiaolong et al., 2021). In addition to corporate policies and practices which are communicated from the organizational leadership. Another point will be organizational learning and adaptation to change. Finally, use the 3Rs of sustainability in resource management (Armenia et al., 2019). The critic agrees that 89 detailed articles are sufficient to provide findings and analyses. The recurrent theme in this section revolves around stakeholder engagement and management.

Furthermore, conflicts and disagreements with stakeholders through the early stages of the project life cycle can hinder the performance of the project. A proposal was established by creating a process of using stakeholder and project managers' inputs to reach a suitable position. This study was based in the developing nation of Iran. The green building sector is new, but it is increasing in popularity (Bahadorestani et al., 2019). The critic noticed that the proposed framework is adopting the practice of

stakeholder engagement to achieve social sustainability along with constructing green buildings. The SDGs are taken under consideration in every section of this paper which reveals the importance of the UN SDGs in Iran. This is yet another paper that supports the theme of stakeholder management.

#### **2.4. Agility Enhances Project Management Practices towards Sustainability**

Agility and sustainability are claimed to be the focus of North American project managers. The lack of empirical data regarding sustainability and agility widens the gap between the variables. After the statistical analysis we have seen that the H4 that correlated the sustainability and agility is partially supported thus, the authors urge the industry to adopt the practices to eliminate waste (El-Khalil and Mezher, 2020). The critic built a link between the two variables that need further support. Another paper urges the adoption of agility as a strategy as it will lead a path to the UN SDGs and due to globalization, the business environment has become competitive, and the projects need to be agile to adapt to the changes. This paper urges for the adaptation of agility in design to achieve sustainability and one of the methods of achieving it is a sustainable supply chain (Zhao et al., 2023). The scope of this paper goes beyond the scope of project management as it points out the importance of a sustainable supply chain. The critic is convinced with the findings of the conceptual paper as the journals cited were ranked based on importance and significance.

Another study has stated that there is a literature gap surrounding the resilience and sustainability variables. A framework that studies the relationship between resilience, agility, digitizing, and sustainability was suggested. Although the term sustainability is vague and requires a redefining process. Two propositions that are related to our paper consist of achieving a positive impact in reliance doesn't necessarily mean a positive impact in sustainability and vice-versa. However, digitization triggers a change in both resilience and sustainability (Miceli et al., 2021). The critic finds the finding interesting as it sheds light on the assumptions that all the terms have direct relations without empirical data. The theoretical contribution regarding the variables can be expanded through primary research.

Similarly, research in an Italian context points out the importance of the sustainable supply chain and provides quantitative data to show the positive relation between a sustainable supply chain and the firm's performance. Two solutions to break the barriers and adopt the green supply chain method were recommended (Cantele et al., 2023). Firstly, it combines the supply chain with agility practices which include several internal factors such as flexibility, and employee well-being and external factors including social sustainability and CSR practices. Secondly, resource orchestration theory (ROT) includes the development of resources to add value (Cantele et al., 2023). The researcher found this contribution to be valuable as the supply chain is an integral part of projects and those methods are mediated by agility to achieve sustainability.

Moreover, a study that evaluates the effectiveness of a sustainable supply chain by providing sustainable capabilities and enablers.



The capabilities include quickness, flexibility, competency, and responsiveness. Several enablers include human competencies, and strategic and operational management. The supply chain agility model has sustainable capabilities embedded in their system, so the end goal is sustainability. The paper mentioned that this model faces criticism due to a lack of focus (Al-Zabidi et al., 2021). This research provides similar findings as the supply chain's agility and sustainable core prove that agility is a valuable mediating variable. This research provides both theoretical and practical contributions as the model is clear and easy to follow. Supporting the agile catalyst, the author criticizes the common waterfall project management as it is only suitable for small projects. However, agility consists of multiple groups ranging from launching, designing, testing, etc. The agility gives the project flexibility through quick customer feedback will pave the way to lean and green outcomes (Fanse, 2020). The critic identifies the agility principles as a facilitator for sustainability. This research doesn't fill the gap required as it supports the earlier claims without providing empirical data.

**2.5. Literature Summary**

Table 1 shows the citation and the reference code that will be used in all the following tables. The following section will show the theoretical findings of past literature and will provide propositions and hypotheses to be explored in further studies. The researcher will use the theoretical findings in creating CSFs and recommendations that will merge project management practices with agility.

**3. THEORETICAL FINDINGS**

**3.1. Project Management Contribution to Economic Sustainability – Table 2**

*3.1.1. Further clarification of economic practices*

The findings have revealed that organizations should adopt a sustainable core and the sustainable practices should be communicated from a strategic level. If it is embedded in the organization, the high-cost barrier might limit sustainability practices. It is suggested that the organization balances the sustainability and the cost factor using tradeoff methods and balances both variables of cost and sustainability. In developing countries, the government handbooks might not price the materials up to date so upper management must put this control variable under consideration and plan accordingly.

**3.2. Project Management Contribution to Environmental Sustainability – Table 3**

*3.2.1. Further clarification of environmental practices*

From a construction point of view, it is prevalent that the materials can be reused, reduced, and recycled. A process of remodifying scrap materials can reduce the extractions of other materials which can contribute to a circular economy. Furthermore, construction using modular methods can reduce the waste on-site. Both methods can reduce and confine the wastes in a remote location that can be dealt with as scrap. Moreover, by following the practices set by the building rating systems, the organizations can contribute to a green building industry. Moreover, the UN SDGs and PMI can also provide sustainable methods if implemented can pave the path to sustainability.

**Table 1: Citation and references code**

Citation	Reference Code	Theme of the paper
Project management contribution to economic sustainability		
(Al-Marri et al., 2019)	ECO 1	Organizational change
(Martens and Carvalho, 2017)	ECO 2	Competitive Advantage
(Guerra and Leite, 2021)	ECO 3	Barriers of Adoption
(Tanui and Tembo)	ECO 4	Governmental support
(Elsebaie et al., 2023)	ECO 5	Migrant workers
Project management contribution to environmental sustainability		
(Mansell et al., 2020)	ENV 1	UN SDGs
(Ershadi et al., 2021)	ENV 2	PMI framework
(Kurnaz, 2021)	ENV 3	Green indicators
(Minunno et al., 2018)	ENV 4	3Rs of Sustainability
(Wuni and Shen, 2022)	ENV 5	Modular Construction
Project management contribution to social sustainability		
(Yang et al., 2018)	SOC 1	Mega-projects
(Magano et al., 2021)	SOC 2	Awareness and education
(Armenia et al., 2019)	SOC 3	Stakeholder Management
(Bahadorestani et al., 2019)	SOC 4	Stakeholder engagement
Agility enhances project management practices towards sustainability		
(El-Khalil and Mezher, 2020)	AGL 1	Elimination of waste
(Zhao et al., 2023)	AGL 2	Design agility and sustainability
(Miceli et al., 2021)	AGL 3	Organizational resilience
(Cantele et al., 2023)	AGL 4	Green supply chain
(Al-Zabidi et al., 2021)	AGL 5	Agile Supply chain
(Fanse, 2020)	AGL 6	Continuous agility through groups

**3.3. Project Management Contribution to Social Sustainability**

*3.3.1. Further clarification of social practices*

The social practices involve the stakeholders in the project timeline and get feedback. This process might be time-consuming but the theoretical findings suggest that stakeholder satisfaction plays a vital role in project management. The stakeholders can be involved by creating focus groups or even online forums, whichever method transmits their concerns to the project management office.

**3.4. Agility Enhances Project Management Practices towards Sustainability**

*3.4.1. Further clarification agile practices*

Agility in the supply chain and digitalizing can be considered as the catalysts that can push agility to sustainability (Table 5). Although the agile thermotical practices presented were constrained to a construction scope away from the IT or software project management scope due to the differences in practices.

**4. CRITICAL SUCCESS FACTORS (CSFS) AND RECOMMENDATIONS**

**4.1. CSF and Reference Code**

Table 6 shows the link between the CSFs, recommendation, and reference code in addition to the agility code to create a recommendation and a discussion point. This section clarifies

**Table 2: Comparative Analysis of Sustainable project management practices and Economic sustainability outcomes by country**

Reference code	Sustainable practices in project management	Sustainability	Country of study
ECO 1	Sustainability must be communicated down from the top management (Sustainable core business model)	Increase profit and mitigate risk by following the UN SDGs	United Arab Emirates
ECO 2	Achieving competitive advantage by using a sustainable innovative business model that serves that stakeholder and the environment	By fulfilling the stakeholders and the environmental needs the organization can adopt more CSR models in the future.	Brazil
ECO 3	Identifying the barriers that stop the organization from achieving a circular economy is the first step to adopting sustainable practices	High costs, outdated business models and lack of awareness must be addressed and tackled to achieve sustainability	United States of America
ECO 4	Used government handbooks to assess the construction prices and sustainable prices recommended by the government.	Although some governmental handbooks in developing countries are misleading. Adopting some practices will get construction managers closer to adopting at least one aspect	United Kingdom, Cyprus, and Kenya
ECO 5	Migrant workers who acquire higher skills, knowledge and experience can reduce the costs and allow them to gain higher wages than their home countries	Allowing the workers to use the money earned for social development by engaging in sales transactions for themselves and their families.	Russian Federation

**Table 3: Comparative Analysis of Sustainable project management practices and Environmental sustainability outcomes by country**

Reference code	Sustainable practices in project management	Sustainability	Country of study
ENV 1	Implementing the UN SGDs in engineering and construction projects	Align with the UN plan that claims to have a positive impact on the environment	United Kingdom
ENV 2	Use the PMI framework to study the resources obtained by the managers and assess the capability of adopting the UN SDGs through budgets, supply chain and risk management	Reduction of waste, conserving natural resources and efficiency indicators	Australia
ENV 3	The negative approach of greenwashing for profits has led to obtaining certifications that forced managers to follow sustainable approaches	Building ratings such as LEED and BREAAAM have led to the creation of a green building industry that conserves water and electricity	Turkey
ENV 4	Utilize the Rs approach of (Reuse, Reduce & Recycle) and produce parts that can last long, using scrap in producing new parts and reduction in construction wastes	Route to achieve a circular economy through prioritizing ecological sustainability	Australia
ENV 5	Construction of modular buildings, buildings are built off-site and then transferred to the project floor	Effective supply chain, managerial competence and using the 3Rs approach to conserve natural resources and reduce waste	Hong-Kong

**Table 4: Comparative Analysis of Sustainable project management practices and Social sustainability outcomes by country**

Reference code	Sustainable practices in project management	Sustainability	Country of study
SOC 1	In mega projects, stakeholder management through engagement, creating links, and getting feedback to achieve stakeholder satisfaction is crucial for a project to survive or be successful	Stakeholder engagement and satisfaction	Australia and China
SOC 2	The personal perception of the project managers on ethics and social responsibility	Creating an aware demographics of the circular economy	Portugal and South Africa
SOC 3	Embedding stakeholder management in the project’s framework	Satisfied stakeholders	Italy
SOC 4	Creating a feedback process for stakeholders	Satisfied stakeholders	Iran

**Table 5: Comparative Evaluation of Agility and Sustainability in Project Management across selected countries**

Reference code	Agility	Sustainability	Country of study
AGL 1	Project management maintaining agility	Reduction of wastes	Lebanon
AGL 2	Agility in the design process	Competitive advantage and high flexibility	Malaysia and China
AGL 3	Filling the gaps in the theoretical framework and including digitizing	Steppingstone for future research	Italy
AGL 4	Merging supply chain practices with agility to achieve sustainability in addition to ROT	A green supply chain that will achieve employee well-being internally to CSR externally	Italy
AGL 5	Agile supply chain with sustainable components and enablers	Mediates the sustainability result of the project	Saudi Arabia
AGL 6	Multiple groups for continuous development	Supporting lean and green manufacturing process	United States of America

an ongoing issue, and agility will act as a mediator to solve the situation although agility is an independent variable in this research. This is done to create originality and novelty in this research. This table combines the best practices and helps overcome some barriers.

#### 4.2. Recommendations

1. To assess the barriers the gap between agility and sustainability must be filled. According to literature agility can mediate sustainability. AGL 6 provides a simple method to adopt agility which includes setting small but multiple groups in a project to facilitate flexibility which will be followed by sustainability. A simple procedure can put the organization on track with communication from strategic-level managers.
2. To create a green building sector, agility can facilitate the process by utilizing sustainable supply chain practices and start the integration of sustainability and agility from the designing process. From design to implementation agility arranges the capabilities of the indirect variables of PM practices and Sustainability outcomes required.
3. Modular buildings require a sustainable supply chain to achieve the sustainable outcome of waste production and lower pollution emissions. The supply chain can transport the constructed parts to the construction site but with lower emissions than usual. Agility can transform the practice of modular construction to sustainable goals like lower pollution and less waste.
4. By Adopting AGL 4 the organization can utilize resilience practices with both agility and sustainability. The gap in the literature referring to agility and sustainability is discussed. Furthermore, digitizing is an agile practice that could be adopted in modern-day organizations.
5. Adopting AGL 4 and AGL 5 the stakeholder engagement will be supported by the supply chain system will include external components such as CSR and employee well-being internally. Stakeholder engagement is a complicated process that combines external and internal users. Agility can enhance the sustainability enablers which will be required to achieve sustainability.
6. AGL 1 examines the project management practices in North American and emphasizes the result of waste reduction because of agility. The 3Rs can be achieved if the agility model has environmental sustainability at its core. This method might be economically challenging as the organization must focus on resilience and agility.
7. The migrant worker's situation can be an economically viable option. However, social sustainability might be an issue as migrant workers will receive less income which will lead to income disparities and lower native employment, presumably as this topic requires further studies due to its complexity and sensitivity. The researcher suggests implementing AGL 6 as the workers could be utilized in groups for continuous development in the meantime although this method might not be suited in the long run due to the lack of sustainability as perceived by the researcher.

### 5. REFLECTION AND FUTURE IMPLICATIONS

This study sheds light on the importance of sustainable project management initiatives either with agility or with setting a

sustainable core. For instance, the sustainable business model can follow an innovative approach and set sustainability as a core which will influence the results (Martens and Carvalho, 2017). However, another method includes setting the UN SDGs standards and integrating them into the project's plan (Mansell et al., 2020). Both approaches used different independent variables. Furthermore, the importance of agility wasn't properly defined in the paper that states the extensity and the vitality of the practice. Agility and sustainability seem to be buzzer words that attract readers as in this case the researcher is found guilty of engaging in similar research. Agility isn't as well-defined as sustainability yet and several authors are filling the gap in knowledge by providing a theoretical framework (Miceli et al., 2021). The researcher found the results to be rather strange as agility was presumed to be a catalyst for sustainability which is true to some extent. This could be due to existing gaps in the literature that connects agility with other Project management practices.

The lessons learnt from this study are that agility acts as an independent variable to the dependent variables of sustainability in all three pillars. However, several examples could connect project management activities with sustainability without the need for agility. Hence, agility is important, and it eases the path to sustainability however not necessary to achieve sustainability. The researcher believes that agility is a new concept and with time might be crucial for maintaining sustainability in the field of project management. This research doesn't undermine the agile practices in project management. However, this research has found that agility is a tool used by project managers which can be handy. Moreover, with higher complexity project management agile practices might gain popularity. The relation between agile project management and sustainable project management is directly related.

To Proceed, this research summarizes the findings in a conceptual capacity which provides data and critique on several findings. Moreover, the relation and extensity of agility and sustainability must be tested on a more regional on local scale as it is recommended by the researcher to conduct a deductive investigative study to explore more in the field (Yang et al., 2018). The second approach includes discovering the correlation between agility and sustainability in a quantitative approach by using correlation, regression, component analysis and other statistical tools if relevant as determined by the course of the research. Both methods will fill the knowledge gap. Both methods could study a single organization with multiple projects and employ a resource-based view (RBV) to keep the variables of efficiency and effectiveness valid in the research. The researcher noticed that the UN SDGs are followed religiously by developing countries only as the developed countries presumably have better resources to implement better strategies due to higher capital and research volume. The country's Human Development Index (HDI) can be viewed from a statistical website online although the researcher is unaware of the credibility (World Population Review, 2023). If the studies will be conducted in the UAE which currently sits in the developed countries league can provide us the UN SDGs and presumably better models. It is evident that the leadership

strategies both academically and professionally have an impact on transforming the traditional management (Hussain et al., 2018) into a sustainable one with several fundamental frameworks that can be utilized from Lewins' to Kotter's 8 step process (Kotter, 2012).

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