

The Role of Agile Project Management in Driving Innovation: Exploring the Impact of Knowledge Management and the Moderating Effect of Organizational Culture.

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Abstract

The aim of this study is to analyse the impact of Knowledge Management (KM) on Innovative Performance (IP), with Agile Project Management (APM) as the mediator and organizational culture (OC) as the moderator. Using dynamic capability theory, the paper puts forward a conceptual model in which innovation results from the combination of knowledge processes, agile execution, and a supportive culture. The conclusions indicate a strong direct link between KM and innovation performance, pointing out that through proper knowledge practices, organisations are able to increase their innovation capabilities. The mediating role of APM in this linkage was statistically confirmed, meaning that the use of agile methods is key to unlocking the creative potential of knowledge. On the other hand, the moderating role of OC did not reach statistical significance, which suggests that the effect of culture may vary depending on context or industry. The article delivers theoretical insights and also points to practical implications for improving business performance.

Keywords: Agile Project Management, Innovation, Knowledge Management, Organizational Culture and Dynamic Capability Theory

1. Introduction

The key driver for the long-term success of an organisation is to stay competitive and flexible in the rapidly changing landscape of business. This is not only the responsibility of R&D departments but also influenced by various factors which is done by collective effort. Organisation must focus on innovation to stay resilient in marketplace due to increasing technological disruptions and

global competition (Cillo et al., 2022; Kamis & Ferrell, 2023) This needs an overall understanding of internal processes which drive the innovation and the elements that either support or delay them. The one most important internal factor that plays very important role in driving innovation is knowledge management. KM enables organisations to utilize their intellectual assets by the process of structured creating, sharing and applying knowledge, which leads to the progress of more innovative ideas & solutions (Akbari & Ghaffari, 2022). Effective knowledge management helps learning and collaboration, promotes determined decision-making and reduces the unneeded repetition and waste (Zaim et al., 2023). Although there are many benefits of knowledge management, but the effect of KM on innovation is not always promised. Several specific variables, such as organisational culture and management practices, may influence this relationship. Knowledge management is important for innovation but is not enough to ensure innovation.

One relevant factor is organisational culture which includes shared values, beliefs and norms that determine the behaviour within an organisation. Culture shapes how the knowledge is developed and disseminated, how projects are handled and how it fosters innovation (Alavi et al., 2023). Culture that supports research, accept failures, and encourage clear communication is likely to utilize the ability of KM to support innovation. Cultures which are centralized and hesitant can stop the creative and collaborative processes that support innovation (García-Morales et al., 2022). In this circumstance organizational culture offers as an important helper or a problem in transforming knowledge into innovative results. Agile project management is another important factor in improving the innovative performance, especially in case of unstable and difficult environments. Based on the principles of Adaptability, customer focus and ongoing progress, APM helps the organisations to respond quickly to changing demands and use feedback for the development of product process (Hoda & Murugesan, 2023). The agility of these approaches fosters KM by providing a planned yet adjustable structure for knowledge application. In flexible environments, collaborative teams operate in short cycles, frequently assessing performance and making adjustments, thereby strengthening organizational learning and innovation (Denning, 2023). The efficiency of APM is also influenced by culture and knowledge related factors. For

example, flexible principles such as empowerment, trust and flexibility, and the achievement based on constant flow of actionable knowledge (Misra et al., 2022).

Knowledge management, organisational culture and Agile project management each contribute to innovation. Several studies have examined their combined effect on innovation performance; there is still a gap that how these factors collectively affect the innovative results. Few researchers called for more combined structure that consider mediating or moderating roles in ICM relationship (Popa et al., 2022).

Existing research focused on technology-driven sectors in developed countries and based on single level approach as a result, neglects the multi-level character of innovation processes throughout different types of organisational culture. The range to which these events occur in non-Western settings with low resources and cultural characteristics and where knowledge share and project methods are likely to be extremely different still remains not perceived to a large degree. This question needs to be answered for several reasons. The major driving force for each competitor is innovation especially in developing economies where firms have to bypass the usual development stages (Gonzalez & Martins, 2023).

Organisations are aware that technology alone is not enough for innovation without a cultural and managerial ecosystem that supports it (Liao et al., 2023). The application of hybrid work models and digital transformation after the COVID-19 era has resulted in increased demand for agile and knowledge-based responses to change (Ahmed & Sharma, 2023). The development requires a revision of existing models that should be based on empirical data and should consider new work and innovative situations. This study provides solution to this topic by suggesting a theoretical model, implementing it empirically, and also linking knowledge management, organizational culture, and agile project management to the level of innovative performance. The major point of the paper is to explore the direct impact of KM on innovation, the possible mediating role of APM in this relationship, and the moderating effect of organizational culture. This integration method allows us to grasp more intimately the channels through which knowledge becomes innovative and the preconditions in which this change becomes better.

The main point of this research is that it can be both a source of theoretical and practical implications. From a theoretical point of view, it adds up existing knowledge by utilizing the concepts of knowledge management theory, dynamic capabilities, and culture-related issues to uncover a holistic depiction of innovation drivers. It does not only look at factors in isolation but also looks for relations which could impact positively or negatively innovation. The conclusions offer substantial advice to leaders and decision makers looking to increase the agility of the organization, create pro-innovative cultures, and make knowledge flow more efficient. By showing which actions can lead to KM becoming a source of innovation in different cultural and managerial contexts, the research enables organizations to establish more successful innovation management plans. There are several ways this study can have a positive impact. For the research community, its role is to pave the way for the next empirical studies dealing with the interaction of knowledge, culture, and agility in innovation ecosystems. For managers, the main message is that they need to integrate KM initiatives with agile methodologies as well as cultural values and that only this step will lead to continuous innovation. Policymakers may use the result to design training programs that increase the level of innovativeness in sectors of strategic importance in the economy. The present research clarifies the contingent factors that influence the innovation process; therefore, it moves closer to the objective of creating tolerant, imitative, and progressive organizations in a scenario of swift change in the world.

2. Hypotheses Development

In current literature the link between knowledge management and innovative performance is recognized, while there are few evidence of the collaboration between innovation and knowledge management (Khalil et al., 2023). Although KM is the digital provider of assets (information/professional know-how, and mutual experience) which is necessary for innovation, it rarely has a immediate or logical impact (). The study has discovered that KM has strong positive impact on innovation output of company, this leads to a rise of both practical and conceptual studies that concerns the strategic importance of KM in support of the creativity of organization. KM is important in creation of ideas, processes or services through the coordination of systematic gain, sharing and use of knowledge (Zaim et al., 2023). The companies which take the duty of developing and sharing knowledge are one which takes more benefit in identifying the present or

current innovations and dealing with environmental problems (Haji et al, 2023). The insights support the idea that KM increases both the opportunistic and exploratory innovation by enabling the rearrangement of already existing knowledge, coordination between different departments and constant learning. KM applications start to become a day-to-life routine in the companies, they get to understand not only programmatic knowledge and institutional memory but also get experience in two aspects: incremental as well as radical (Akbari & Ghaffari, 2022). These results proved that KM is not only innovation source, but also a strategically advantageous arms because of its ability in increasing the level of innovation when it is coordinated with organizational processes and culture.

The results also claim that this point of view is logical with the idea that knowledge is very valuable non-physical asset, and the suitable management of it is key to emergence of innovation ability and performance. This link is very clear in companies that are described as dynamic and knowledge intensive where speed of innovation is the main component that decides the position of competing industries (Cillo et al., 2022). The involvement of KM in strategic decision-making process foster the companies adaptability and responsiveness which are two very significant factors in retaining innovation in unstable market (Ahmed & Sharma, 2023). According to papers, the companies should spend in knowledge infrastructure, establish learning based culture and open communication system as a means to maintain the highest level of original operations.

H1: Knowledge Management has significant impact on innovation performance

The organizations, instead time and again depend on internal standards and managerial methods to convert the knowledge into physical innovative products (Khalil et al, 2023). One visible method here is project management, and to be more specific agile project management, which is a model that has been broadened in the changeable environment. Moreover, by calling for recurring cycles, collaborative teams, and change flexibility, APM quite naturally fits the requirements of innovation-focused environment (Denning, 2023). It is well-known that agile methodologies offer a adaptable structure that serves resource knowledge mobilization process in an organized and impactful way. Consequently, KM helps innovation indirectly through the utilization of Agile operation practice. APM mediates the relationship between KM and innovative performance is

important, confirmed by the practical results (Hazeri Baghdad Abad, 2023). The results suggest that KM strategic value is not utilized to the full degree when there is no appropriate mean for its operationalization exists. APM can be considered the living pipeline that converts the KM resources to physical and innovation stimulating measures. By adopting the principles of agility such as fast feedback loop, repetitive development and team independence, organisations can implement their knowledge more easily and efficiently (Khalil et al., 2023). Equally, the agile project modes are willing to promote experimentation and constant progress, which are the two major aspects of innovation process. Such harmony with previous literature could suggest that agile settings encourage the use of knowledge through country available rapid testing, confirmation and change of insights into creative solution (Misra et al., 2022). All these findings are indicating of the fact that APM is not only the bare existence, existing between KM and innovation but also acts as the main mediator that facilitates the transfer of organisational knowledge into change. This effect may be broad in terms of both theory and practice. it is not existence of knowledge, but its rapid implementation that explains high performance in area of innovation.

H2: Agile project management mediates between knowledge management and innovation performance

Most research identifies the contribution of (KM) to innovation performance as most important aspect, KM is very effective only if it implements differently in each of the organisation (Khalil et al., 2023). This difference creates a need to distinguish the situations where KM is known as innovative one. Organisational culture is a major factor that establishes both perception and use of knowledge in businesses. Culture refers to common principles, rules and practices that identify the communication of employees and the way they decide. The scholar agrees that even a highly developed KM system may unsuccessful if such a structure is applied in a culture that prohibits openness, cooperation or exploration (García-Morales et al., 2022). However, cultures that welcome posture changes and are defined by belief, knowledge acquisition and innovation could act as a promoter and thus they are able to change any static knowledge into changeable abilities

(Achdiat et al., 2023). This, therefore, calls for study on how KM to innovation relationship is effected by cultural orientation rather than overall impact that KM has.

The results of this study provide some reason that organizational culture is a moderating variable, as the degree of connection between KM and innovation performance relies to a large extent on cultural factors. KM activities that are traditionally described by constant learning, shared vision and collaborative decision making have a high possibility to turn from being as basic part of day activities into actions that encourages innovation (Alavi et al., 2023). The culture not only fosters the spread of knowledge, but they also empower knowledge rearrangement and new creative uses which are important for both gradual and drastic innovation (Sajid et al., 2023). However, cultures that support the principles of hierarchy or risk aversion do not allow open flow of communication and sharing of knowledge that reduce overall positive impact of KM on innovation (Zaim et al., 2023). This finding is constant with recent results of culture as social infrastructure which is further empowering or limiting the utilization of knowledge once it has been recognized (Ahmed & Sharma, 2023). The moderating effect of culture is based on innovation capacity: KM in itself cannot transform into innovation success without gaining of an environment friendly and benefited with regards to cultural circumstances (Khalil et al., 2023). This learning promotes the KM conceptual framework by recognizing the prominent impact of socio-behavioral environment, a key area of knowledge processes, and one practice implication that reflects the revived role of cultural audits and change programs in the support of KM strategies for the improvement of innovation performance.

H3: Organizational culture moderates the relationship between knowledge management and innovation performance

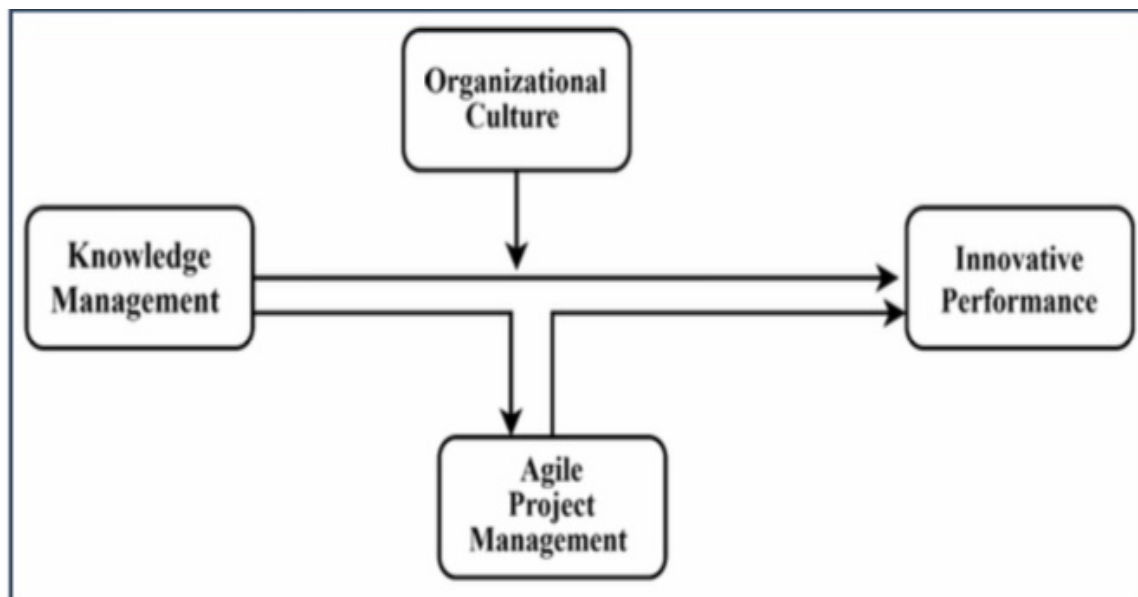


Figure 1: Theoretical Framework

3. Methodology

This study is conceptual in nature, and it examines the mediating role of agile project management (APM) between Knowledge management (KM) and Innovation performance (IP), and the moderating effect of organisational culture (OC) in driving innovation. The reason behind examining the relationship is that Knowledge management is very important driver of innovation, and its influence is sometimes unpredictable upon the factors of organisation such as management practices, culture and APM gives a adaptable model for application of knowledge. Previous literature has examined the variables as most of the research focused on the individual involvement of KM, OC and APM to innovation, but limited research have identified their interconnectedness and combined effect on innovative performance (Popa et al, 2022). The advance research is limited to investigate the interaction of these variables in particular industrial environment like construction in Pakistan, emphasis the need for context-specific study. The model is based on Dynamic capabilities theory (Teece et al, 2018) which provides the foundation to understand how APM, KM and OC interact to enhance innovation. The data are gained from online resources like google scholar, science direct and Scopus.

4. Discussion

The positive and meaningful link between Knowledge Management (KM) and Innovative performance (IP) enhances the systematic statement that KM is the main source of innovation. The current study is in line with previous statements that the functions related to KM such as the acquisition, dissemination, and application of knowledge are strongly related with the organizational capability of generating new products, processes, and services (Zaim et al., 2023). Besides, it also supports the claim that KM can encourage both explorative and exploitative innovation at the same time by helping the recombination of internal and external knowledge bases. In changeable environments, the arrangement of KM strategies with business objectives makes companies and their operations faster to react and more adaptable to changed situations in the market (Akbari & Ghaffari, 2022). As a result, the results are constant with the systematic view of the firm which argues that knowledge is the most important source of sustained-competitive advantage (Grant, 1996). Moreover, it is an interesting point that the research scope expands this dimension by suggesting that none of the key players in KM should be evaluated as just technical infrastructures but rather strategic and integrated in a routine (Cillo et al., 2022). In other words, organizations that are using well-established KM systems are better at organizing the intellectual resources thus supporting the first hypothesis and the point on model integration of KM.

APM mediation on KM to IP pathway confirms that part of the impact of KM on innovation is through agile mechanisms. APM is the driver for the repetitive use of knowledge in real-time project environments as it provides the model and process foundation (Denning, 2023). This is constant with the Dynamic capabilities theory which states that knowledge alone cannot be used to create innovation except if it is treated by dynamic and adaptive processes (Teece et al., 2016). Agile methodologies empower cross-functional collaboration, quick prototyping, and consistent feedback, which are all focused on the practical use of knowledge in the innovation environment (Hoda & Murugesan, 2023). Additionally, the important mediation effect highlights that providing knowledge which can be converted into innovative products demands not only organizational flexibility for the application of projects but also for strategic adjustment, as the literature indicates by emphasizing the partnership between KM and APM for the establishment of responsive and innovative organizations (Misra et al., 2022). The mediating effect suggests that companies

involved in KM need to simultaneously innovate by building agile capacities so as to efficiently use their knowledge resources, thus confirming the second hypothesis and giving more empirical evidence to integrative models which view innovation as a interconnected knowledge and flexible system result.

The hypotheses of the moderating effect of organisational Culture in the relationship between KM and IP being irrelevant were rejected. Although culture has recognised as a major component which effects knowledge creation, distribution, and application (García-Morales et al., 2022). The results highlight that in the given situation , OC did not affect the level of KM-IP association considerably .On the other hand, KM practices have feasibly developed organisational enough, to depend less on specific cultural attributes to work efficiently (Ahmed & Sharma, 2023).This difference from the previously mentioned works that also consider culture as a source of growth or a barrier to KM performance, particularly those that focus on open communication, trust, and risk aversion as elements of allowing innovation, shows how the influence of culture is highly focused and dependent on the industry, the growth of the organization, or regional culture (Alavi et al., 2023; Zaim et al., 2023).

These results collectively match the statement that knowledge management (KM) practices are efficient in fostering organizational innovation with the ability to develop both explorative and exploitative innovation while rapidly adapting to market changes. The mediating role of APM highlights that the conversion of knowledge into innovative results is dependent on organizational flexibility, which supports the cooperation of KM and agile approaches.

5. Conclusion

This study is conceptual in nature as it examines the mediating role of agile project management (APM)between Knowledge management (KM)and Innovation performance (IP), and the moderating effect of organisational culture (OC) in driving innovation. According to findings, organisational culture is not playing important role as a mediating factor and thus the hypothesis of its strong impact has rejected. This study recommends managers to create a culture that promote knowledge management and agile project management practices, and to take into account sectoral and regional differences while implementing innovation strategies. The study does not consider

all possible factors and only some of them like digital transformation readiness, leadership styles, and employee engagement are removed. These factors can be used in future to give better and longer explanations about the innovation propensity phenomenon in the organization.

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