

Conceptual Framework of Agile Project Management, Affecting Project Performance, Key: Requirements and Challenges

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ABSTRACT

There have been a few studies that have adequately compared the advantages and disadvantages of various types of agile techniques. This research study develops a conceptual model that enables top management team members, software developers, project managers, and researchers to gain insight and understanding of agile techniques and methods. Those involved in the project want to successfully complete projects on time and within budget while maintaining high quality standards and operating in a safe and environmentally conscious manner. They also want to minimize the negative impact on the environment. When it comes to project execution, however, there are numerous constraints and risks that limit their ability to begin or progress operations, and which frequently have a significant negative impact on the overall performance of the project. After reviewing the literature, it was discovered that the Agile method is capable of accurately representing most factors. It is based on the findings of this research that this paper presents a conceptual model for the effect of agile project management on project performance in terms of timeliness, cost, and quality. Factors are unpredictable and can have consequences that are difficult to undo without incurring significant costs in the process. As a result, it is more critical than ever to investigate their impact on project outcomes. The ability of countries to manage risks, control expenditures, exploit and benefit from opportunities is dependent on their ability to comprehend the impact of Agile methods on their respective organizations and cultures.

Keywords

Agile methodology, Agile Manufacturing, Affecting Project Performance, Challenges and Requirements.

1. INTRODUCTION

Globalization has increased worldwide competition, with the market increasingly unstable and customer requests rising [1]. The product requirements of our customers are increasingly tailored and available in smaller quantities or as individual items [2]. Companies need to look beyond cost reduction and priority factors such as agility, quality, and speed to ensure they can respond efficiently and effectively to customers' unique needs [1]. The 21st Century Production Strategy report first introduced Agile Manufacturing as a global paradigm shift: a new industrial paradigm. The "agile manufacturing movement in the United

States," developed by industry, has gained momentum. [3] Companies can adapt and thrive in today's volatile and dynamic environments. Therefore, organizations must lead [5]. Although agile production necessitates adaptability and reaction, it also necessitates change [5]. Agile involves the integration of all staff and IT tools that contribute to the overall performance of the manufacturing system. The main goal of Agile Manufacturing is to solve the needs of customers rather than just products by more directly involving them in product development [6]. Companies must understand what their clients need now and what they will most likely need in the future to implement an effective agile production system [3]. A new approach to project management is necessary for the development of new products, processes, and strategic business models. This is called Agile Management of Projects (APM). Practices, values, and a conceptual framework form the basis of APM [7]. Agile can be used to create a hybrid solution with other methodologies. This type of mix may be used by enterprises to manage, for example, planning, one or several operational phases. In recent years, several popular methods have been developed to stress fast iterative delivery and flexibility, which are often used in combination with agile [8, 9, 10, 11].

2. AGILE PROJECT MANAGEMENT

Agile project management (APM) is a project management methodology that concentrates on agile production. Importable behavioral changes that affect how team members think and act in business are required to be agile [5]. Project managers have traditionally taken a structured and planned management approach to avoid differences in plans, with APM adapting to changing circumstances. Continuous innovation, product adaptability, reducing time-to-market, and adapting to unavoidable change are examples. The capabilities of APM for any working environment are all influenced by their adaptability to people and processes as well as their quality and reliability [7]. APM is thus a methodology for project management to be implemented if a company or organization wants to be as agile as possible. The culture and strategy of the company are of fundamental value, and variables such as the nature of the problem to be addressed must be considered. The organization, the staff and the world outlook of the leader are all key issues [7].

2.1 Challenges and Requirements

To ensure the successful deployment of project applications, standardization bodies must define relevant standards [14] 15. For example, in relation to the project data stored in Agile, it is

important to clarify which software can receive data in any size or format. It should be defined as the location of commercial data on or off the Internet. Agile. Although many companies have adopted agile principles and attempted to follow them, some have struggled to achieve them, and teams are not prepared to meet the transitional challenges because of their organizational behavior. The whole literature emphasizes Carina Loire et al. A critical analysis and agility of all company-related information, both internally and externally, should only be performed if the whole organization understands the value of data [22]. In this approach, information is considered a critical component of an agile management environment. [10]. Inspection should be a top priority., regardless of the development methodology, is, of course, an integral element in any project. We see that when we distinguish between "traditional" and "agile development," the purpose and location of the activity are fundamentally different. [17], A 'traditional' approach is used to determine which features are to be applied and which are to be included in the subsequent version of the product. Essentially, although it cannot be implemented simultaneously, the functionality is finally implemented. Consequently, project management is the responsibility of the developer. When asked about the priorities of a "traditional" project, the client often places a high priority on most needs.

2.2 Agile Manufacturing

The tactic to respond and accommodate the complexity and deceptive deceptiveness of the present environment has evolved in Agile Manufacturing (AM). [5.] [12] It is not dependent on a single company; rather, it is dependent on the interaction of several companies, making it critical for them to establish effective working relationships. When this capability is applied, it develops into a competitive advantage [11]. As a result, cooperation may be necessary for the development of potentially beneficial relationships. Agility's strategic capabilities can be applied to a wide variety of situations. Adaptability, responsiveness, speed, a change management culture, integration, low complexity, and high performance are just a few of the characteristics of an enterprise. Priorities include the development of high-quality, customized products, as well as the mobilization of core competencies [5].

2.3 Agile Manufacturing contributes of success the projects.

is critical for project alignment because it provides a critical tool to support each project's product, service, and so on. As a result, the APM is required for all new products developed by the company (services, product-service systems, and solutions). The APM must be agile in nature. [5] Agile model, which defines agile behavior between team members and stakeholders. Colleagues, particularly the AGILE team (Agile Practices), who successfully convince the organization to deliver products or services that are customer-centric, proactive (Agile Values), and built on a transformed environment are all critical considerations. Facilitates the development of novel opportunities and products [13] [27]. Agile project management: A proposal for a communication-based workflow.

This APM framework is comprehensive. Presented in Figure1.

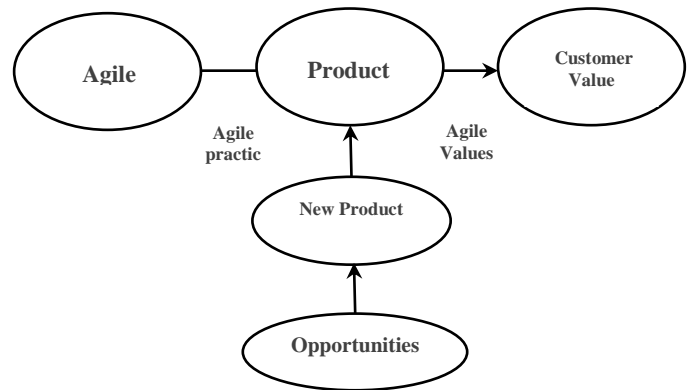


Figure 1:APM overall

2.4 Agile Manufacturing supporting projects

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2.5 Agile Project Manufacturing Roles (APM)

Individuals have a key role to play in the development and personal efforts of the company. Project teams must embrace agile principles and values in terms of agile project management and must be mandatory for the formation of a specialist team known as AGILE, which promotes agile behavior and is composed of the following roles [13].

2.5.1 Product Owner

A member of the AGILE team who acts as a point of contact between the client and the rest of the AGILE team. Its colleagues regard it as an expert in project management, as well as in the product and the client's needs. It is conceivable He is considered the customer representative, as he collaborates with the rest of the AGILE team and other businesses. daily colleagues who assist in elucidating client requirements

2.5.2 Team Leader

Who is responsible for lead, support and resolve any issues or problems arising from the AGILE Team Members? External issues must be resolved for the team to work efficiently and effectively.

2.5.3 Team Members

A self-organized, cross-functional team of people who work together to create the finished product or solution You should be able to make several contributions to the achievement of the project. When working in an AGILE team, members can assume

several roles instead of just one [12], showing that the team is not monolithic. Each team member can assume a variety of roles static, but dynamic, depending on the project requirements. The initiative of the AGILE team must be confident. Two main classifications exist:

2.5.4 Stakeholders

Include customers, prospective customers, and suppliers. partners, suppliers, regulatory agencies, and others with a direct or indirect stake in the transaction. Their role is to provide feedback to the AGILE team while also assisting or exerting influence over them. Supporting Cast: employees who assist the AGILE team in developing products and solutions. offering a range of services with a particular emphasis on technical support. Fig. 2.

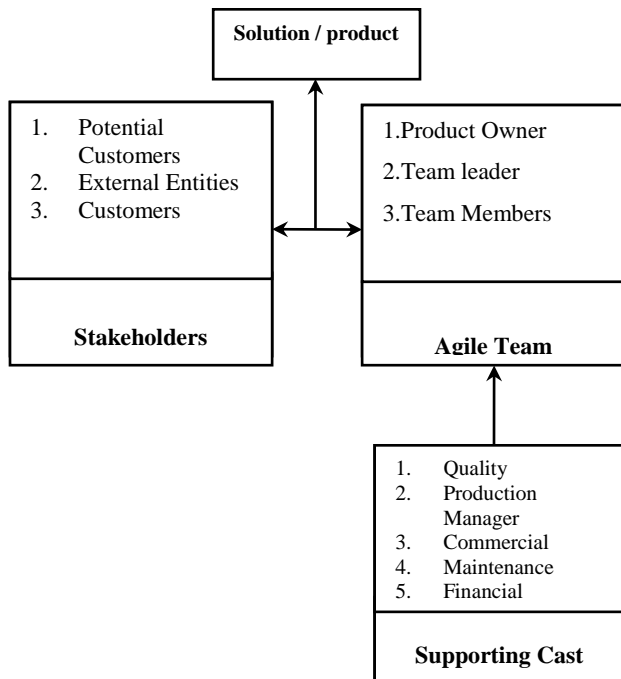


Figure 2: Roles in APM

3. RESEARCH METHODOLOGY

The literature is reviewed discovered that the agile factor can be used to represent most external factors. As a result, this paper develops a conceptual model for the agile factor that impacts the Performance of the project in terms of time, cost, and quality. Factors are used because it is a comprehensive framework and an active tool for understanding, analyzing, and categorizing the various variables in the microenvironment [18].

3.1 Conceptual Framework

Researchers have developed several conceptual models to better understand the factors that influence Performance of the project in terms of time, cost, and quality. Furthermore, they investigated the factors that affected them. They focused their attention primarily on the internal factors that were associated with the project and its participants. An earlier study [19] [20] [21] to demonstrate the various variables that influence project performance in companies. The findings revealed that the cost of materials, the management of time, and the management of quality all have an impact on the performance of a project. As a result, this research adds to the body of knowledge by investigating the impact of external factors (agile) on project outcomes [28]. The impact of these factors on project performance will be investigated in terms of cost, time, and quality because these are the most frequently used indicators by researchers across the board. As a result, a conceptual model has been developed to define the impact of agile factors on the overall performance of the project's performance. While project performance is the dependent variable in this study, the independent variables are 5 factors and an average. Seven hypotheses have been developed to investigate the effect of agile factors on performance, all of which are based on the conceptual Framework that has been developed.

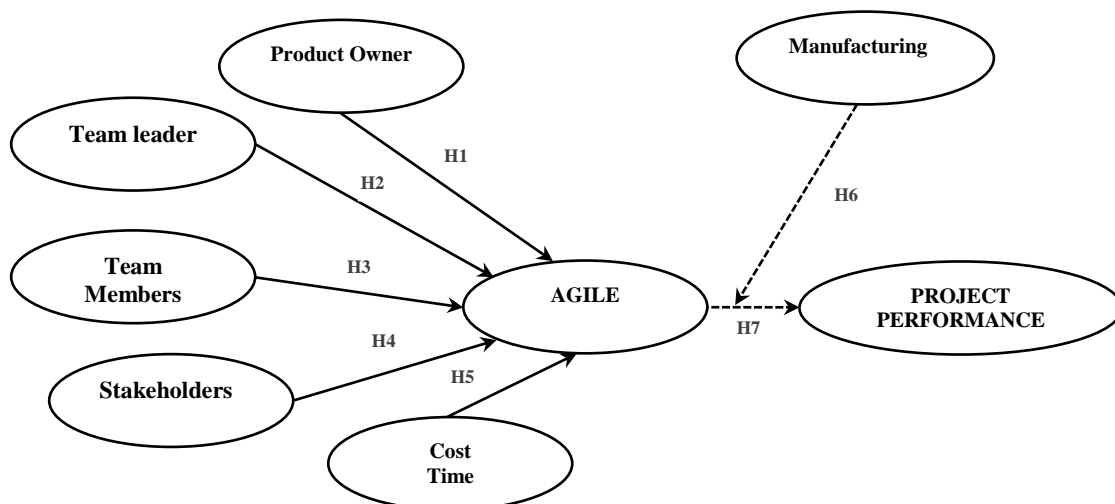


Figure 3: Conceptual Framework

Table 1:
Description of the research variables

Independent Variables	Moderating	Mediating	Dependent
1. Product Owner	Manufacturing	Agile	Project
2. Team leader			Performance
3. Team Members			
4. Stakeholders			
5. Cost/Time			

Based on the political factors, the following hypothesis is proposed:

H1: Agile have significant a positive effect on Product Owner factor. [5]. [12]. [13].

H2: Agile have significant a positive effect on Team leader factor. [5]. [12]. [13]

H3: Agile have significant a positive effect on Team Members. [[12]. [13]

H4: Agile have significant a positive effect on Stakeholders. [5]. [12] [13].

H5: Agile have significant a positive effect on Cost/Time. [5]. [13][23].

H6: Manufacturing have a positive significant Moderates the relationship Among Agile and Project Performance. [5]. [11].

H7: Agile have a positive significant Mediating the Relationship Among Product Owner, Team Leader, Team Members, Cost/Time, And Stakeholders Factors with Project Performance. As a result, the concept presented in this paper does not contradict previous literature; however, the conceptual framework proposed in this paper introduces the various variables that influence project performance. The variables proposed as independent variables (dependent on agile factors) are Leadership, Workforce, Customer Focus, Strategic Planning, Information, and Analysis, among others. In addition, process management. In addition, the second manufacturing variable to consider is organizational structure. Besides that, as a moderator variable, the manufacturing sector is proposed. And the Agile is proposed as a mediator variable between the Independent Variables and dependent Variables.

4. RESEARCH FUTURE

To determine the proposed conceptual model's validity, data will be collected using a mixed method that combines two distinct approaches to the problem. The first stage involves conducting a series of semi-structured interviews with a variety of project-related experts. Second, the second approach employs a structured questionnaire distributed to various project stakeholders across several organizations in the public sector involved in the agile and project industries. The smart PLS software package and structural equation modeling (SEM)analyze the data collected and establish relationships between the influencing Agile factors [21] [23] [24].

5. CONCLUSION

The evidence from previous studies has shown that the success of project performance depends on the extent of its commitment to quality management practices, Agile. Figure 3 depicts a

theoretical model of how quality management practices affect project performance. The proposed model describes the relationship. Among the constructs, the model in this study will give a comprehensive understanding of the direct and indirect effects on the relationship between these variables to support this model for evaluating the hypothesis empirically in the future.

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