THE SYNERGIES BETWEEN AGILE FRAMEWORK AND CHANGE MANAGEMENT

Abstract

Over the past several years, the business environment has become highly unpredictable and thus companies are in a state of constant change. This dissertation focuses on the interface between agile frameworks and change management to offer better ways of adjusting in organisations so that projects and change initiatives can be effectively implemented while delivering the expected results sustainably. The research objectives are to investigate the potential benefits of, study the potential drawbacks of, outline the effect of, and find the possible strategy for integrating the two approaches and possibly attain the concept of synergy. Thus, the study starts with a brief description of various agile approaches, which include, but are not limited to, Scrum and Kanban, based on the principles, like flexibility, iterations, and customers' cooperation. It also examines at the framework models that are typical in the change management area such as Kotter's 8-step model and the ADKAR model to understand the transition processes more and how to deal with the resistance. The literature review provides insights to the advantage of applying both these methodologies, for instance enhanced responsiveness, and higher proportion of successful projects; and the likely difficulties and factors that hinders the implementation of the methodologies such as culture change, leadership and support among others.

Both primary and secondary research techniques are used to assess the effect of agile-change management on organisational performance. Agile adoption via change management is beneficial and aligning change management with agile frameworks improves the successful implementation of change, flexibility, and structures for projects. The presented work also reveals the key success factors for synergies, communication throughout the process, feedback culture, and leadership. Therefore, this research seeks to add to the body of knowledge by establishing the gap between the effects of the agile frameworks and change management. The recommendations contained in this research are thus fertile and pragmatic for organisations and businesses that need to grapple with the dynamics of change in today's volatile organisational environment underpinning sustainable improvement.

National College of Ireland

Project Submission Sheet

Student Name:	Gayatri Ajay Dalvi		
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Programme:	MSc in International Business	**Year:**	2023-2024
Module:	Research Methods and Dissertation		
Lecturer:	Jeffrey Walsh		
Submission Due Date:	10th August 2024		
Project Title:	The Synergies Between Agile Frameworks and Change Management		
Word Count:	15202		

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Name: Gayatri Ajay Dalvi

Student Number: x22200975

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Acknowledgment

I would like to express my gratitude to my academic advisor for their invaluable guidance and expertise throughout this research. I also appreciate the support and resources provided by the faculty. Special thanks to my colleagues and peers for their insightful feedback and encouragement. I am deeply thankful to my family for their unwavering support and patience. Lastly, I acknowledge the participants and organisations involved in this study, whose cooperation made this research possible. This dissertation is a testament to the collective effort and support of many individuals.

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Chapter 1: Introduction

1.1 Background and overview

Agile framework and change management are two important phenomena in the current organisational theories. Success of agile-oriented frameworks based on the agile manifesto is founded on the focus on flexibility, iterative work, and collaboration with the customer, having a striking impact on project management and software development. Frameworks such as Scrum as well as Kanban enable constant evolution to accommodate the changes in the requirements. On the other hand, change management primarily deals with the assurance that an organisation effectively transitions by having smooth changes effected while also being relevant. Some frameworks such as Kotter's 8-Steps & the ADKAR model detail more edged procedures for managing change from the human aspect. Agile framework and change management are focused on the same activity change management.

1.2 Research aim and objective

Aim

Aim of this study is to explore the integration of agile frameworks with change management practices to enhance organisational adaptability, improve project outcomes, and ensure sustainable change in dynamic business environments.

Objective

- To investigate the underexplored benefits of integrating agile framework with change management.
- To emerging challenges and barriers to its successful integration of change management.
- To assess the impact of agile-driven change management on organisational performance in diverse contexts.
- To develop innovative practices for achieving synergy between agile framework and change management.

1.3 Research question

- How to explore the specific advantages that the integration of agile methodologies brings to change management processes?

- How to analyse how organisational culture, structure, and other internal factors contribute to successful integration of change management?
- How agile-driven change management affects key performance indicators such as productivity, customer satisfaction, and innovation?
- How to identify and recommend strategies for effectively blending agile methodologies with change management practices to maximize organisational outcomes?

1.4 Research rationale

Contemporary business environment is defined by factors such as innovation change and rate of the technological pace, customer demands and market trends. Hence organisations continue practicing these changes to adapt rapidly to these changes with the aim of remaining relevant. Key principles of agility such as flexibility, iteration, and clients' involvement have become crucial to project management and software development, where the primary focus is improvement and modification. Similarly, change management practices offer systemic methods through which to achieve transition and manage resistance and thus the capability of organisations can be effectively used to approve change. The motivation behind this research arises from the realization that even though both agile frameworks and change management significantly enhance organisational performance, their joint influence has not yet been well-explored. This is an interesting overlap because combination of agile processes and change management can remove various flaws of the two, hence the development of more sustainable organisations.

This is particularly relevant in the current scenario of the global environment that seems to be becoming increasingly unpredictable in the future. Ability to deal with change is a key survival and growth factor in organisations. Seeing the implications and rewards as well as difficulties and consequences of this integration going to contribute to the theoretical foundation significantly, it is going to provide valuable recommendations for the organisation wishing to develop its change management practices and striving to pursue long-term positive results and growth in performance. There are many characteristics that come together while exploring both agile frameworks and change management which makes this study not only interesting speaking in terms of theory but also relevant when it comes to practicality. Characteristics like flexibility which is oriented with agile frameworks and systematic perspective of change management. Studying this synergy also brings together other characteristics like trust and human behavior. In the books "The Agile

Culture: Leading through trust and Ownership" (Pixton; Gibson; Nickolaisen, 2014) and "Agile Change Management: A Practical Framework for Successful Change Planning and Implementation" (Franklin, 2014) intrinsically have portrayed how agile frameworks and change management aligns with each other. In "The Agile Culture" author has mentioned the significance of trust and ownership in building a strong foundation in encouraging agile culture within Organisations (Pixton; Gibson; Nickolaisen, 2014). On the other hand, "Agile Change Management" has explored how trust element influences the speed change. (Refer to Fig: 1.4.1)

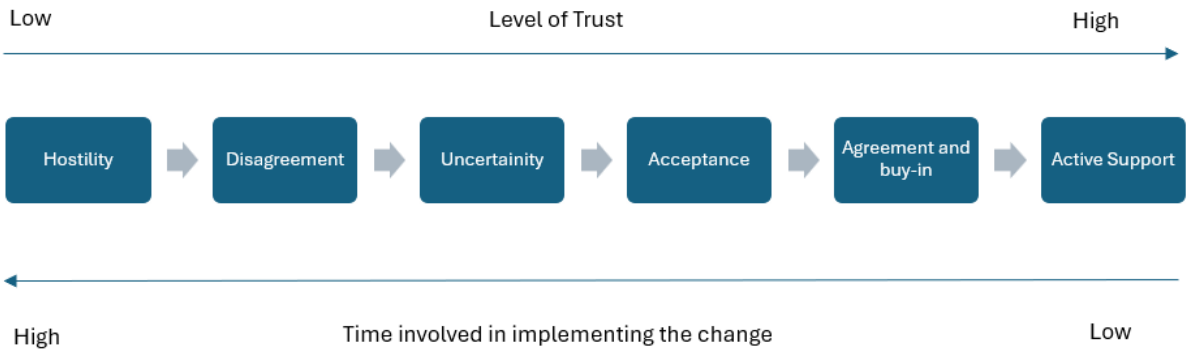

Figure 1.4.1: Impact of trust on the speed of change

Source: (Franklin, 2014)

Further elaboration of why exploring this synergy is compelling because when agile frameworks and change management comes together their individual process align together which ensures that when Organisations bring in changes, they are implemented smoothly with an aim to be sustain and well-received (Kotter, 2012).

Fascinating aspect of this synergy includes its holistic approach towards foundational elements such as culture, structure, customer satisfaction, productivity and innovation. These elements are considered as one of basic yet important challenges or issues in any organisation in today's dynamic market (Denning,2016). Providing attention to the situation related to these elements would be a cornerstone in any organisation's success. The perspective of Stephen Denning's in "Agile's ten implementation challenges" indeed provides a perspective that highlights the significance of this synergy (Denning,2016). Fostering rapid change thrives agile management rather than sustaining the status quo (Denning,2016). To attain optimum triumphant change for individuals in the organisation, it is necessary for them to change (Jaaron, Hijazi, & Musleh, 2022).

It is necessary for an agile frame of mind to perceive change as a positive prospect or a room to manoeuvre rather than considering it has jeopardy. This kind of attitude is necessary in an organisation for tackling difficult situations in today's realm of business, which particularly provides a strong reason as to why the study of this synergy is worthy and pertinent.

1.5 Problem statement

Organisations must operate in environments that constantly transform and pressure to improve as to remain competitive. The main approaches to handling all these issues are agile frameworks and change management practices. Yet, the use of agile frameworks with the traditional change management is not studied, which leaves a gap regarding the interaction of these two approaches. The misnomer, therefore, is in where one is likely to misunderstand particulars of gain and hindrances of this integration, and the way it will influence performance. If such dynamics are not understood it becomes challenging for the organisations to manage change strategies for (Business Process Re-engineering (BPR) while utilising both the traditional activity-based approaches to change and the lean process methods. This research aims at filling this gap by studying the systematic approach to the implementation of agile frameworks in relation to change management by the identification of requirements and best practices for effective change in uncertain business environments.

1.6 Significance of the research

Importance of this research is rooted in the potential to expose a gap which has been deemed important in current theory and practice. Both agile framework and change management are entities that are celebrated individually for their roles in the success of organisations. Some of agile methodologies major principles that have found approval with organisations include flexibility, iterations, and customer involvement and these qualities make agile ideal for current project management and software development processes. Prospect of using an agile framework concomitantly with change management practices has not been studied enough by both scholars and methodologies. Purpose of this research is to explore this intersection and shed light on how these approaches can be integrated to strengthen organisational responsiveness, support successful projects, and guarantee change sustainability.

Attempts to identify new change management practices that make use of agile's strengths to efficiently compare with how change management is currently done in today's complex dynamic environment. Consequently, the findings from this research can be useful for practitioners as it can come with clear recommendations on how to implement change management in agility. There is potential for organisations to leverage the agile-driven change management knowledge, that can provide result in improved business processes strength and flexibility. The management of change in the competitive environment has become an important issue because today's business environment is more dynamic than ever increasing rates of innovation and development, growing competition as well as globalization.

1.7 Research hypothesis

H0: Adoption level and combined analysis of agile framework with change management practices do not affect the overall organisation flexibility, project success rates or organisational change persistence in changing business contexts.

H1: Combining the agile framework with change management best practices greatly increases the organisation's responsiveness, increases the likelihood of success for projects, and helps to facilitate lasting change within the constantly evolving business climate.

1.8 Summary

This research aims to understand how organisational flexibility can be promoted and subsequently applied to projects to achieve positive and permanent changes in volatile business settings. This research starts with the elaboration of the importance of agile processes and approaches along with the concept of change management in the modern theory of the organisation (Rana, 2024). The study also defines the purpose of the study to compare these two approaches as well as the objectives of investigating the advantage or disadvantage of using these strategies. Also, it evaluates the effects of these strategies on performance and establishes a set of principles of integrating the two strategies. Formulated research questions are intended to cover these areas in detail. Rationale section provides why this study is necessary to fill a gap in the current literature and useful for practitioners. In the problem statement, it has been identified that agile and change management integration requires a structural approach to be investigated.

Chapter 2: Literature review

2.1 Introduction

Integration of agile framework and change management starts with establishing aspects which are dynamic and point to the need for agility and proper change management in current business landscapes. Originating from a principle of flexibility in project or software development the agile methodology allows projects to adapt to changing requirements and it has significantly transformed both fields. Frameworks such as scrum and kanban are the perfect examples of an organisation's flexibility since it allows for constant changes to reflect shifting needs. On the other hand, the change management processes such as Kotter's model of 8-Steps or ADKAR model give a general framework on how change management is executed and how transitions are managed effectively so that there can be full adoption of change instead of resistance. It is imperative to understand here that both the agile framework and change management are centrally important when approached individually but the study of how it interlinks is a topic that has not been discussed heavily in the field of organisational research.

The goal of the research is to investigate the relationship between these concepts to address organisational flexibility and better project performance to achieve lasting change in uncertain market environments. Some of the aims are to explore the advantages of the interaction of agile and change management, to determine the potential obstacles to integration, to consider the effects of integration on organisational effectiveness, and to outline strategies for successful cooperation between them. This research is conducted on the assumption that although the economies have individual advantages, their impact on organisational resilience and performance needs to be explored further. This research aims to fill the gaps identified in the current literature by offering the practical solutions that practicing change management professionals may need when facing such challenges as fast-growing technologies, changing consumer demand, and increasing competitiveness globally.

2.2 Review of previous research papers

Integrating agile frameworks and change management practices can be considered as an emerging topic in recent years. Literature reviews identified that many papers have investigated different characteristics of agile methodologies, focusing on effects on managing projects as well as on organisational outcomes (Somda *et al*. 2024). The published research about scrum suggests that

the framework is iterative and proficient in flexibility since it is designed to account for ever-changing project specifications. In the same way, literature on kanban points to the optimisation of workflow and flexibility by means of visual systems.

According to research by Karamustafa, 2023 there is also enough literature on the change management frameworks. One of the practical methodologies focusing on the management of organisational change that are widely used is Kotter's 8-Step Process for Leading Change, which addresses the need for creating urgency and building a coalition of those who can guide the change process all the way to the stage where the newly introduced changes are labelled and rooted in the organisational culture.

Step	**Description**
1. Create urgency	Generate motivation for change by highlighting risks and opportunities.
2. Form a powerful coalition	Gather influential leaders to champion the change effort.
3. Create a vision for change	Develop a clear and inspiring future state for the organisation.
4. Communicate the vision	Share the vision widely and ensure understanding and buy-in.
5. Remove obstacles	Address barriers that could hinder change implementation.
6. Create short-term wins	Achieve early successes to build momentum and morale.
7. Build on the change	Continuously improve and adjust strategies based on feedback.
8. Anchor the changes in corporate culture	Embed changes into the organisation's norms and practices.

Table 2.2.1: Kotter's 8-Step process for leading change

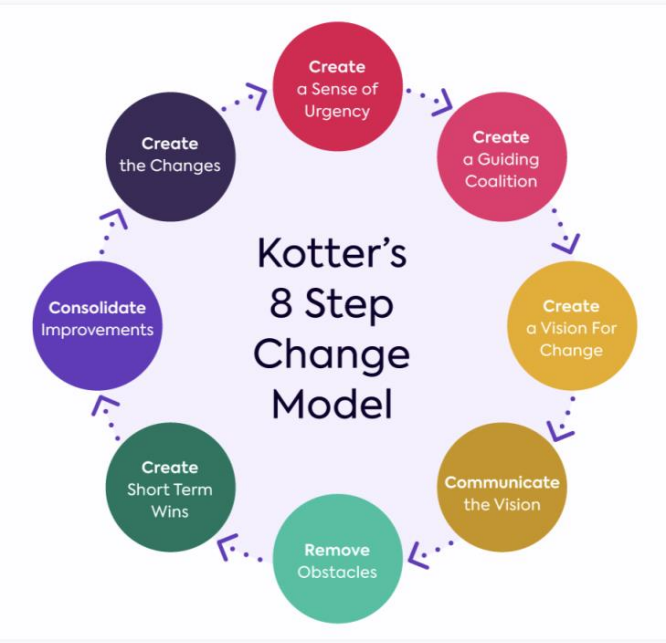

Figure 2.2.1: Kotter's 8-Step change model

(Source: GRIFFIOEN *et al.* 2021)

Kotter's model is a more complex approach that again looks at the individual change and adds Awareness, Desire, Knowledge, Ability and Reinforcement as key factors to improve the change adoption (GRIFFIOEN *et al.* 2021). Kotter's Eight Step Model is management model that provides organisations with a structure through which change can be integrated properly. Model consists of eight sequential steps. The 8 steps were initially considered as errors that people make in an organisation (Kotter, 2007).

1) Creating personal and external pressure
2) Pulling together the right people
3) Creating a clear and appealing vision and high aim
4) Communicating the vision
5) Releasing people's energy to move toward the vision
6) Planning for and achieving localised wins quickly
7) Expanding the success, accelerating other changes
8) Reinforcing the new behaviour change.

Every change process is performed consequent and cumulative to guarantee that the change is integrated in the company and long-lasting.

These mentioned 8 steps of Kotter's eight-step model is used as an influential factor to change practitioners where in these steps work as a compass in navigating an appreciative approach towards change management (McLaren, van der Hoorn, & Fein, 2023).

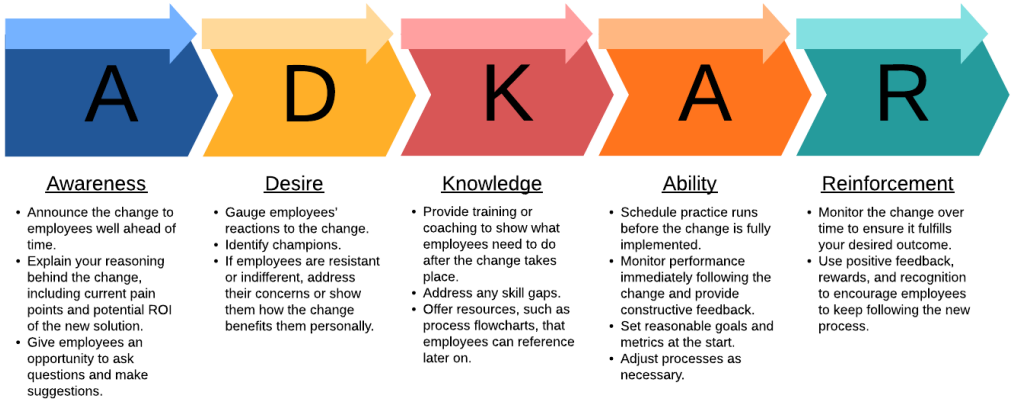

Figure 2.2.2: ADKAR descriptive diagram

(Source: Saeed *et al.* 2021)

ADKAR model is changing management model focused more on people's aspect. It breaks down the process into five key stages: Out of these, possible modifiers are: Awareness, Desire, Knowledge, Ability, and Reinforcement. These 5 steps are also considered as a process to achieve the ultimate change. Therefore, to attain the ultimate change, organisations must consider this as sequential process (Jaaron, Hijazi, & Musleh, 2022).

Awareness is the process of identifying the change which is required and on the other hand Desire is about the change in which the person is ready to accept the change. Awareness is the information and training to enable people to affect the change. Desired outcome relates to what exactly must be changed and adoption and compliance show us how the change can be maintained in the long run. Knowledge is creating awareness through providing thorough information to the people of the organisation regarding creating a change (Jaaron, Hijazi, & Musleh, 2022). Finally, reinforcement is all about analysing whether the desired outcomes have been achieved or not (Jaaron, Hijazi, & Musleh, 2022). Ability is about how the individual implements the change. Described model proves especially useful when transitioning adopters of change at the individual level in organisations.

Research focusing on the ways in which agile can incorporate formal change management methodologies has established that organisations that implement the use of both concepts record better results in agile change processes (Saeed *et al.* 2021). This points out the need for

coordination between agile's flexibility and the rigour of change management to address intricate organisational alterations.

According to another stream of research by Avdoshin *et al*. 2021, agile is effective in managing change because its approach involves frequent feedback as well as constant incremental steps. This alignment helps to reduce gaps and improve the organisation's objectives to match its processes. But there are impediments, as in the case of agile and change management where flexibility conflicts with the rigidness of the conventional change management models.

2.3 Themes

Theme 1: Benefits of integrating agile framework with change management

Linkage of agile frameworks with change management practices results in the provision of numerous resources to organisations (Tsilionis *et al*. 2021). Due to its flexibility, multiple iterations, and emphasis on the involvement of the customer, the agile methodology supports the change management initiative in meeting its objectives of a successful transition and perpetual applicability. This combination improves organisational flexibility, thus enabling companies to quickly act based on changes in the market and emerging customer requirements.

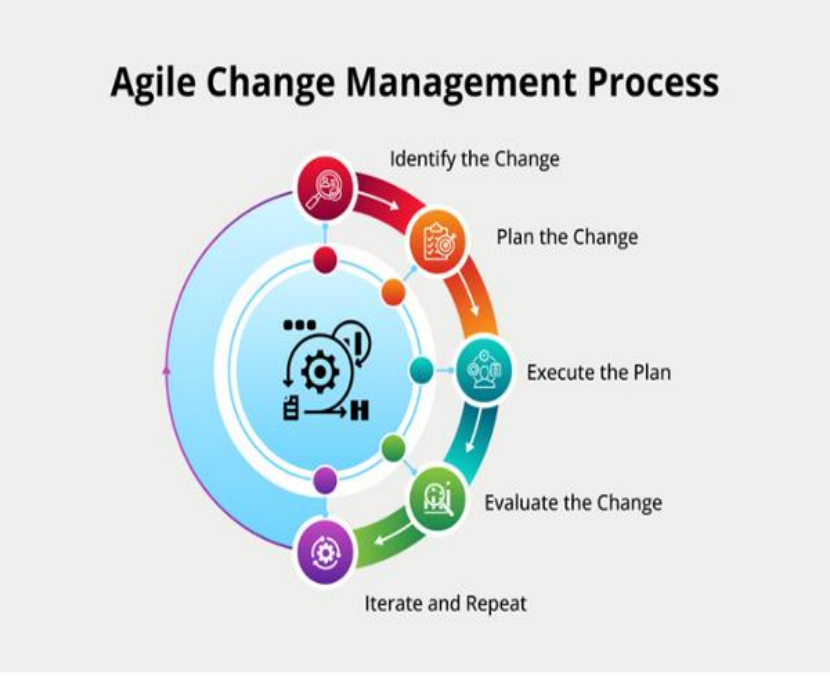

Figure 2.3.1: Agile change management process

(Source: Tsilionis *et al*. 2021)

Effective engagement of all the stakeholders and active disclosure of information encouraging the participation of the key personnel and department contribute positively to change management hence agile's strength in the area (Nakayama *et al*. 2024). This integrated approach also assists in enhancing project results and with establishing a transformational project culture that can reach manufactured-in adaptation and self-assessment that are crucial in today's competitive business world.

Theme 2: Challenges and barriers to successful integration

Agile combined with change management has several issues and challenges that organisations must overcome. One major issue is the civilizational change effort that is needed to support the introduction of agile and change management paradigms in parallel. Despite this, agile's main strengths based on flexibility and iterative work may significantly diverge from the systematic approach that constitutes the change management frameworks' core (Kraljić and Kraljić, 2020). insisting on new strategies of attaining organisational objectives may encounter stiff resistance from the employees who are used to the traditional methods of management.

Figure 2.3.2: Agile change management challenges

(Source: Kraljić and Kraljić, 2020)

Another challenge is the possibility of agile teams and leaders in charge of change management to be working under different agendas and hence not on the same page. Furthermore, organisations may experience issues linked with resources, specifically the implementation of these practices requires time, effort and manpower. Solving these problems implies the usage of an effective communication plan, top management support, and a gradual implementation of the change plan when focusing on the agile and change management goals.

Theme 3: Impact of Agile-driven change management on Organisational performance

Research paper written by Judge 2023, reports that there is a strong relationship between change management resulting from the implementation of agile methodologies and performance by revealing higher responsiveness and improvement-oriented cultures. Combining agile and change management not only helps the organisation to focus on the customer requirements and conditions but also on how to implement the changes easily. This efficiency results into enhanced project success rates and high levels of efficiency for the organisational structures engaged in project management.

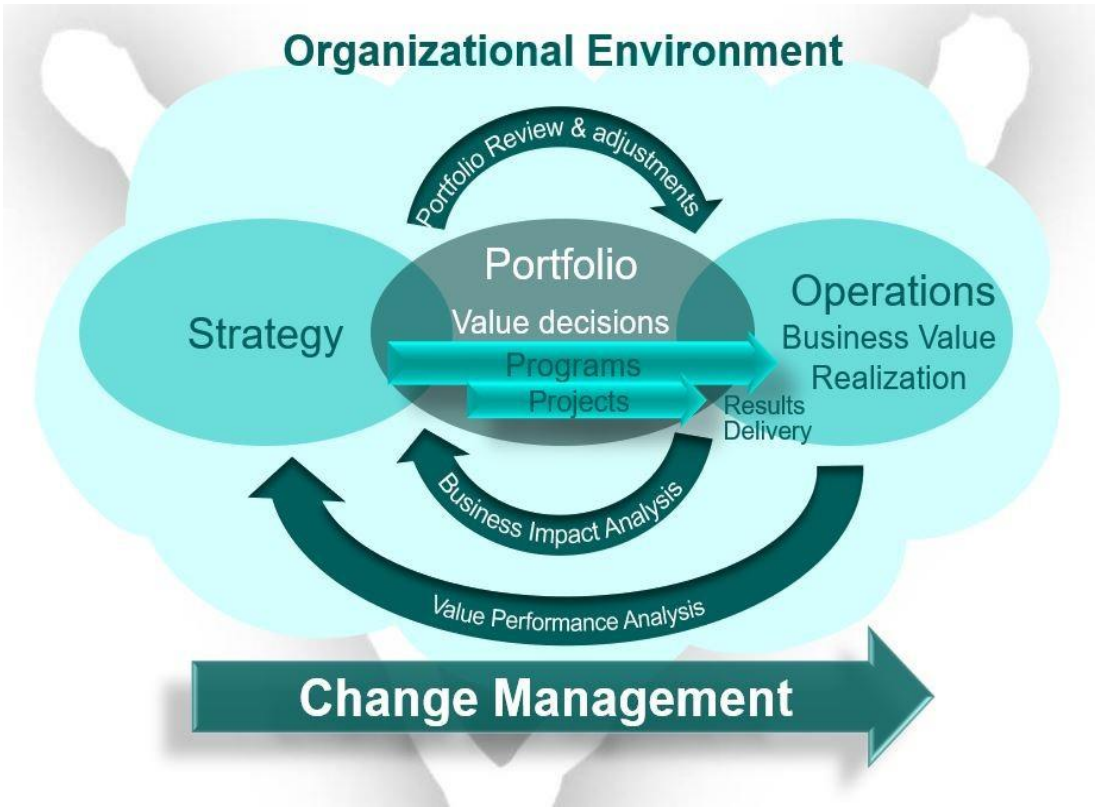

Figure 2.3.3: Change management on organisational behaviour

(Source: Sree, 2024)

Implementation of agile methodology means that feedback can regularly be integrated which significantly lowers the risks of making expensive mistakes and improves the problem-solving process. Furthermore, the approach followed in agile of involving employees in the development of the processes by involving their input makes them more committed and thus satisfied with the change that is being made (Sree, 2024). Incorporating agile principles in change management processes will therefore lead to better and more lasting changes. This integration also assists in eradicating the issues of departmentalization and promoting collaboration and creativity. In conclusion, the introduced agile-driven approach stimulates the improvement of the change management process and enhances the organisation's performance in a continuously changing business environment.

Theme 4: Best practices for achieving synergy between agile framework and change management

Driving synergy between agile frameworks and change management practices, it must ensure that there is practical synthesis and application of the best practices that support collaborative and aligned change. Yet, one of the important practices is the identification and communication of the vision of the integration and objectives for all the participants (Huss *et al*. 2023). To ensure that the project stakeholders are informed and to alleviate their concerns, open lines of communication are appropriate and should involve both one-way and two-way communication.

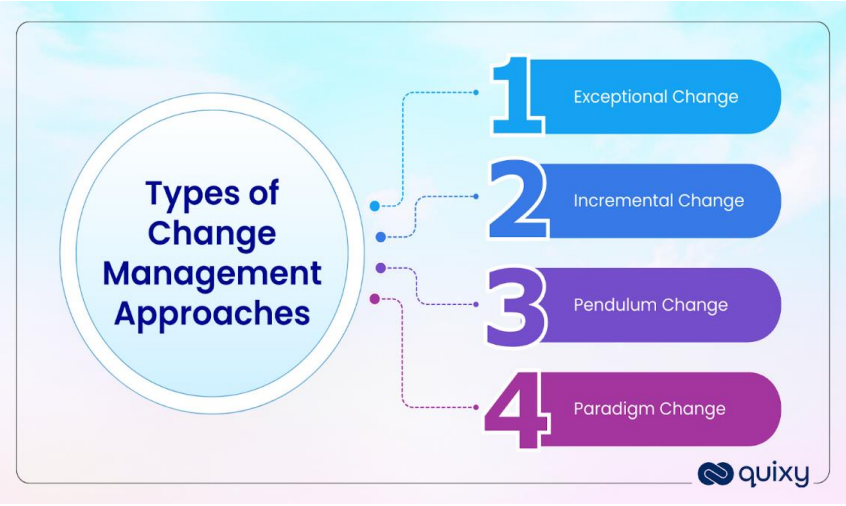

Figure 2.3.4: Types of change management approaches

(Source: Corejova *et al*. 2020)

Change initiatives should inform employees about agile models and change management tools, which should lead to the establishment of training and development programs for the employees.

Another way of managing resistance is to put into practice an organisational culture that embraces change right from the top management levels (Corejova *et al*. 2020). Management commitment is crucial since managers must be advocates of change and demonstrate the expected behaviours. Thus, the identification of metrics and performance indicators allows us to have an objective view of the integration process and monitor its progress, bringing the integration process in line with organisational objectives and achieving effective and efficient synergy.

2.4 Insight and value

1. Benefits of integrating agile framework with change management

The combination of implementing change management within the agile frame proved itself to be valuable for organisations. Agile's focus on flexibility, incrementalism and customer orientation results in adapting easily to the changes that occur in the market as well as to the stakeholders. This integration ensures that there is healthy realization and advancement of the responsibilities of a project hence enhancing the delivery of projects as well as satisfaction of the stakeholders. Introducing agile at the organisational level can be accompanied by change management, which will enable the corresponding transition to occur, accept resistance from organisational members, and increase organisational agility by integrating the concepts of agile with conventional change management models such as Kotter's or ADKAR organisations can effectively address change management issues, minimize resistance and improve the level of organisational agility. This synergy not only improves project delivery but also strengthens the organisation's adaptation of multifaceted tasks in modern environments.

2. Challenges and barriers to successful integration

Attempting to combine agile with change management, it becomes somewhat difficult. Resistance to change, incompatible objectives within the agile teams and change management leadership, and resource challenges are typical challenges. All these must be met through strategic alignment, proper communication and most importantly, leadership support. People related to such organisations should therefore focus on training and change management programs in order to address this gap and make sure that all the stakeholders are on one page with regard to this integrated approach. Overcoming these barriers helps organisations to fully unlock the change management potential of agility on the levels of project success rates and organisational performance.

3. Impact of agile-driven change management on organisational performance

Change management enabled using the agile approach guarantees an increase in organisational performance through creating value in the form of positive organisational culture. The benefits include increased organisational sensitivity to changes; short time required to respond to change; and improved clients' satisfaction. Such an approach brings out the best in the employees in that they are keyed to offer their best when working in groups. Integrating the concept of agile into change management processes helps organisations bring significant and sustainable improvements to specific patterns of organisational behaviour and business outcomes that contribute to the organisation's sustainable development and competitiveness.

4. Best practices for achieving synergy between agile framework and change management

Incorporation of agile and change management entails some of the following best practices: clear communication of the integrated vision, involving stakeholders in every level and further effective control of cultural transformations. It is crucial to set up key performance measurements because they help in sustaining a high level of responsibility when enforcing organisational objectives. Management engagement is therefore important to overcome resistance to change as well as maintain focus throughout the entire process. With the help of these best practices, it is possible to enhance the cooperation of agile frameworks and change management practices, thus promoting organisational change and strategic goals achievement.

2.5 Theoretical framework

The theoretical background of the presented dissertation is based upon the organisational theory, with emphasizing upon the agile frameworks and change management models. Organisational theory focuses on the pattern of formation, functioning and operation of organisation in society and its economy. As it uncovers structures like organisational structure, culture, and power, it also analyses how organisations respond to the external setting and encourage creativity. Based on the theories from sociology, psychology, economics, and management, it offers tools to dissect organisational issues and improve organisational performance. The key principles like flexibility, iterative cycles, and customer focus assisted in improving the concepts of management and organisational adaptability in agile methodologies (Amorim *et al.* 2020). These principles allow teams to quickly adapt to emerging requirements and market climates and promote work and project improvement inside projects.

There are models of change management, which outline procedures regarding organisational transformations and the management of resistance to change. For instance, one can consider Kotter's 8-Step Process and the ADKAR model as systematic ways to manage change by establishing the need for it, involving stakeholders, and positing new habits. From these models, the focus is placed on communication, leading changes, and how resources can be effectively utilized to bring about the whole change. For agile methodologies and change management models, the study deals with the rapidly developing field of organisational theory. Through the integration of agile's adaptive methodologies with the rigidity of change management, one can learn how to improve the ability of an organisation to help in the implementation and realization of change. It not only enhances the results of the projects in process but also supports the development of organisational capabilities because of fluctuating market conditions and innovative technological tools.

Therefore, from this theoretical perspective, it is now possible to identify how these coactive principles can be used to enhance Fjord's organisational flexibility, improve the performance of projects in its knowledge-intensive environment, and produce a sustainable improvement in its performance in the present complex and rapidly changing business world. Based on the analysis of theoretical frameworks for agile and change management, this work aims to offer specific recommendations for organisations interested in overcoming multifaceted obstacles and finding new avenues for development.

2.6 Conceptual framework

Conceptual framework is presented as the synthesis of agile methodologies and change management within the organisational environment. It displays an example of how the main 4 principles of agile development, inclusive of iterative development, flexibility, and stakeholder engagement may be implemented with change management frameworks for instance Kotter's 8-Step Process and the ADKAR model.

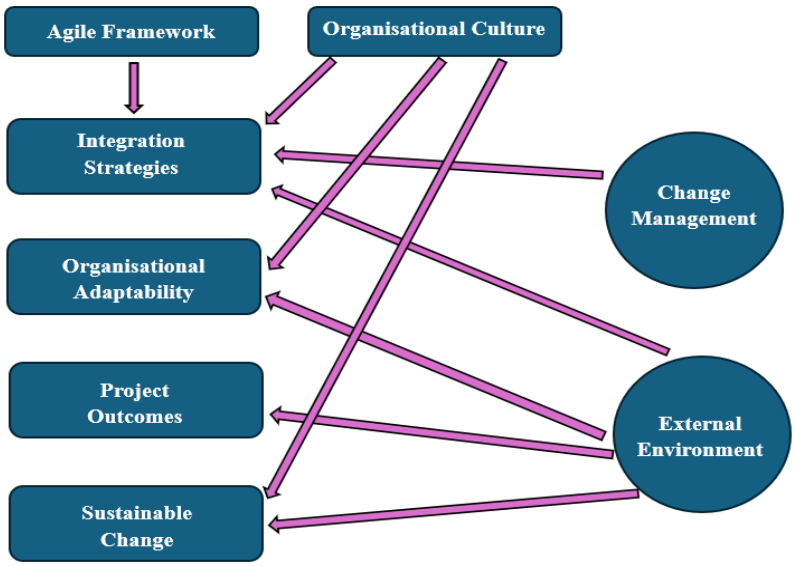

Figure 2.6.1: Conceptual framework

(Source: Noreika and Gudas, 2023)

This integration shall help to achieve the objectives and goals of project transitions aimed at improving the probability of successful project outcomes and achieving lasting results (Noreika and Gudas, 2023). Activities include identification of stakeholders, regular feedback from stakeholders' incorporation of feedback in the plan, and flexibility. The identified approaches act as guidelines to study the integration of these factors and the effect on the performance and flexibility of organisations in uncertain environments.

2.7 Literature gap

The literature gap highlighted in the current studies poses that literature lacks sufficient coverage of the synergistic utilization of agile frameworks and change management in organisational settings. Even though there is a considerable body of explicit research on agile methodologies and change management separately, there is a noticeable lack of scholarly works regarding the integration of these two academic fields that might help to improve organisations' flexibility and project performance (Beh *et al.* 2022). By allowing various teams to respond effectively to new requirements and markets, such approaches contribute significantly to increasing people's creativity and productivity. On the other hand, such frameworks as Kotter's 8-Step Process, and ADKAR model are effective strategies for managing change, particularly, dealing with resistance

and assuring success of changes implemented in the organisation. Still, the process of implementing agile has not been conducted together with the above fundamental change management methodologies comprehensively.

The importance of bridging this gap is in the identified opportunities that agile frameworks can have with change management. Namely, agile's premise of change integration correlates well with change management processes, as it allows ongoing improvement of change enterprises and organisational performance (Kamal *et al.* 2020). This shows that when change management is done under the agile framework, some of the specific benefits could be a lowered rate of change resistance, better stakeholder relations and a faster rate of implementation.

This integrated approach does not only help in the accomplishment of the objectives of strategic projects but also in creating an environment that encourages constant adaptation to customers' needs. In the present unpredictable contexts of business operations and growth due to technological enhancements, globalized economy and fast-changing customer expectations, organisations feel the need for efficient methodologies which are proficient in change along with proven and effective change management accordingly. Thus, the capacity for mastering great sheer work, and handling transformations in corporations and other organisations' performance optimistically together with flexibility is vital to guarantee sustainable success (Perkin and Abraham, 2021).

The study also reveals the absence of enough literature works on the integration of agile and change management, which also points out the real-life issues and risks that an organisation may encounter. These are cultural resistance to agile methodologies, clash between agile project teams and organisational change management norms and insufficient resources. These are the challenges organisations need to appreciate and find solutions to if they wish to undertake agile-driven change management.

More research directed toward advocating the effective agile adoption and change management frameworks, as well as the best practices described in the literature, and real-life examples would be beneficial to practitioners (Noteboom *et al.* 2021). Maybe these ideas could help the organisational leaders and change management stakeholders to understand what practices, processes, methods, and frameworks may help to achieve the greatest value out of the agile structured change management integration. Thus, the present analysis seeks to fill this literature gap by providing additional insight into these confusing sources with a focus on how organisations can best manage these challenges. Thus, through examining the literature on how agile drives

change and offering practical recommendations for improving the organisational agility, success rate of the projects, and organisational performance in the contemporary dynamic contexts of business, this research aims to contribute to the agile-driven change management body of knowledge.

2.8 Summary

This chapter reflected on the advantages, prospects, and effects of using agile frameworks for change management. It described how these strategies could be effectively integrated and explained that such activities should be well-coordinated, supported by leadership and be dynamic activities. The two theoretical and conceptual frameworks were presented primarily to facilitate the analysis of the relationship between agile and change management models (Van Wessel *et al*. 2021). The lack of studies focusing on the integration of the identified sources of encouragement motivated the authors to research their combination. It is hoped that this study will help to fill this void by offering useful information and guidance to those organisations that wish to improve manageability and project outcomes in uncertain business contexts.

Chapter 3: Research methodology

3.1 Introduction

This research work adopts a quantitative research approach to analyse the integration between agile frameworks and change management. Google Forms was used to distribute a structured survey that asked participants from various organisations questions concerning the study's initial data collection. 10-question survey method uses numbered responses (1-4) to address pertinent questions related to agile and change management implementation, its efficiency, issues faced in integration and the level of organisational support. In this research, 240 responses were obtained to cover a wide range of experiences and perceptions regarding the topic. The collected data were then transferred to the Statistical Package for the Social Sciences (SPSS) program specifically 2022 version for analysis.

3.2 Research design

The nature of the research design method is quantitative as it seeks to gather numerical data on the integration of agile frameworks with change management. Primary data was collected from the participants through a structured survey that was developed for the study, the participants were randomly selected to increase the variability (Kolasani, 2023). The questions asked covered areas such as the participant's awareness of agile and change management, their proficiency in handling changes, the areas that posed integration issues, and the level of organisational support.

The quantitative approach can help to measure the variables of the study and offer statistical analyses which will allow making objective conclusions. All the data that were collected were then exported to the computer through SPSS 2022 statistical software package for the following analysis: descriptive analysis, reliability analysis, correlation analysis, factor analysis, ANOVA test and regression test. This design helps to achieve systematic and empirical investigation of the research questions and thus provide more understanding about the integration of agile and change management.

The use of quantitative approach in this study enables the researcher to come up with accurate measurements of the study's variables in a way that enables a statistical analysis that in turn offer factual conclusion. All these analytical procedures help to provide comprehensive and assembly study towards the research questions.

Descriptive analysis gave a clear idea on quite a basic question regarding the nature and tendency of the result, which laid the groundwork for the study of the respondents' perception of the given stimuli. To confirm the validity of the results, reliability analysis helped in verifying that the developed survey instruments were precise and reliable. Descriptive statistics were used to show the frequency of participants' response to the instruments, while correlation analysis provided an understanding of the associations between the important variables, and factor analysis established the dimensions that influence agile and change management practices. The groups' comparisons were determined by the ANOVA test, and the effects of independent variables were measured by regression analysis.

Besides using this systematic and empirical strategy aiding investigation the research questions, it also strengthens the appreciation of how agile frameworks and change management practice interrelate. Thus, by employing these quantitative approaches, the work contributes to the development of a strong methodological foundation for researching the integration of agile methodologies into the organisational context.

3.3 Data collection

To address these questions, the survey was developed to capture the participants' level of awareness of agile and change management, how well agile and change management can manage project and change within the organisation, whether it influenced the project, and if there were issues encountered in integrating the two frameworks, and support from the organisation.

The method of collecting responses from respondents through google forms having numerical options was used so that there would be numerical data available for analysis (Arefazar *et al.* 2020). These questions were designed in such a way that they would provide rich, measurable data on participants' experience and understanding of agile, as well as the way they viewed the integration of change management into the agile process. Participants for this study were first selected by simple random sampling technique hence the sample covered a wide range of people. This strategy is planned to cover extensive experience and a broad viewpoint to increase the ability of the research to generalize the findings. Thus, the total number of participants responding to the survey reached 240, which means that enough material for analysis was received. It exposed the research to a dependable and accurate assessment, valuable to a systematic investigation of the combination between agile frameworks and change management practices.

Google forms is used to distribute and collect of respondents' feedback, thereby increasing the accessibility of the questionnaire across organisations. This structure with questions being given numerical scores out of 4 ensured the description of formal data collection, which is vital given the purpose of the analysis. Thus, the simple random sampling method helped to obtain a diverse sample of subjects and a wide range of experiences that they faced. Gaining a pool of 240 responses deeply confirmed that the social study has a significant database for thorough research. This research methodology combined with the most recent SPSS 2022 version offered the evidence-based necessity, offering the rigorous basis to assess agile frameworks and change management integration, and guarantee sound empirical research results' credibility and integrity.

3.4 Data analysis

3.4.1 Descriptive statistics

Descriptive statistics are essential for summarizing the data and the general characteristics. The descriptive analysis gives metrics into the values of quantitative variables such as means, medians, modes and standard deviations. The mean on its part provides an average value of the variable to give the analyst an understanding of the centrality of the variable in question. The median is handy when data is arranged since it will give the middle values thus giving a hint of the distribution middle especially when it is skewed (Enembreck *et al.* 2023). The mode refers to the data that feature the most frequently in the distribution, which is helpful when working with quantitative data. The standard deviation shows the amount of variation of the values from the mean, it can be described as the measure of dispersion. Since descriptive statistics merely summarize the datasets, they help create a pathway for more elaborate analyses; owing to them, the study can effectively decide on the subsequent steps to take.

3.4.2 Reliability analysis

Cronbach reliability testing evaluates how dependable or stable a measure or a survey is. Cronbach's Alpha is the most preferred coefficient of reliability, and its primary function is the determination of internal consistency. Coefficient alpha should be greater than 0.7 to accept the set of items that will form a scale (Lalmi *et al.* 2022). An assessment of internal reliability is important since this will provide assurance that the data formed is using the instrument is reliable as well as valid; that with internal reliability the instrument will always measure the right thing in the same way. A reliable instrument makes sure that obtained results are caused by genuine

patterns in the data not the variability in the measurement process, which would increase the believability of the research.

3.4.3 Correlation analysis

Through correlation analysis, it is possible to examine both, the nature and significance of the relationship between two or more variables. The index mostly used in this case is the Pearson coefficient, enabling one to determine how variables relate in terms of synchronization (Kamal *et al.* 2020). Positive correlation means that values of two variables are in the same direction, that is, both will increase or either will increase and the other will go down. Its values go from -1 to +1, where closer to the marks ±1 is signifying a more significant relationship. Correlation analysis is very helpful in pointing out the possible relationship between two variables. It assists in developing hypotheses about possible associations that can be investigated further with the help of different statistical methods.

3.4.4 Factor analysis

Factor analysis is a method employed when the researcher wants to examine whether there is a structure or a group of factors responsible for a given set of variables. The major advantage of employing this technique is that it simplifies the data and hence manages to group the variables that are related to each other in factors based on the relationship between them. This method is applicable most often in the research that is carried out to discover new features in the data set. One widespread technique used for factor extraction is the Principal Component Analysis (PCA), which further rotates with the Varimax Kelly procedure to simplify the acquired factor structure. This shall enable the study to determine from the rotated component matrix which of the variables has a high loading on each of the factors (Owais, 2022). Consequently, it serves to enhance the clarity and focus of analysis by providing an overview of the significant factors and reducing the mass of data that must be considered to a manageable quantity, or what is known as the explanatory applicability of factor analysis.

3.4.5 ANOVA

ANOVA is a statistical method used for comparing means of three or more groups to establish if the differences among them are significant or not (Kamal *et al.* 2020). While the one-way test determines the difference between the means of the groups that are based on one factor, the two-way test is capable of testing interactions between two factors (Lindskog and Netz, 2021). Considering this, ANOVA produces an F-statistic that measures the ratio of variance among group

means to that of the within-group variance. A high F-statistic usually accompanied by a p-value that is less than 0.05 means that at least one of the group means is significantly different from the others. In general, when Mauchly's test of sphericity is significant, more stringent forms of post hoc tests such as the Greenhouse Geisser or Huynh Feldt, and when it is not, it is appropriate to use Tukey's HSD to determine which group means differ. The use of ANOVA is vital if the researcher wants to know the effect that certain conditions or treatments have on the dependent variable or the capacity of categorical factors to influence them.

3.4.6 Regression analysis

Regression analysis studies the correlation between a variable which is also called the dependent variable and one or more other variables known as independent variables (Lindskog and Netz, 2021). Linear regression models the relationship by plotting it in a straight line while the equation determines how variations in the independent variables affect the modifications of the dependent variable. Multiple regression builds on this by allowing the predictors to be multiple, so it determines the influence of each of these on the variable of interest. Regression analysis is pivotal for making precise forecasts of outcomes and assessing the impact of specific factors, which is important for unravelling the relationships between various components and detecting how they collectively contribute to the outcomes noted.

3.5 Ethical considerations

Ethical consideration plays an important role in any research to warrant decency regarding the participants and data collected. It follows measures of ethical standards about issues like informed consent, anonymity and participants' rights. Subject acquaintances are given an understandable account of the research goal and place of the participants, guaranteeing they participate willingly. Security of data is ensured through the aggregation of the values to obscure identifying information from anyone who does not require the information. This research also respects the data protection acts which are in force in different parts of the world and responsibly process personal data (Ubi *et al.* 2022). Also, the study does not harm the participants since the questions are presented in a neutral and calm tone and do not cause any harm. Ethical clearances from the right Ethics Review Board or Committee are sought to confirm that the research is ethical. The following ethical principles that the study adheres to guarantee that conclusions made constitute sound, considerate, and honest research.

3.6 Summary

This chapter provides information about the research technique and procedure and specifies the framework and data for this study. The study uses descriptive statistics, reliability analysis, correlation, factor analysis, ANOVA, and regression on the integration of agile frameworks and change management. Each one is chosen to offer an exhaustive view of the research questions and objectives to conduct an efficient analysis of the data. Issues of ethics are raised to ensure that participants and their privacy are protected (Naslund and Kale, 2020). The applied research method is aimed at achieving valid and reliable outcomes that would significantly advance the knowledge of the interaction between the chosen agile frameworks and change management.

Chapter 4: Results and findings

4.1 Introduction

This chapter sums up the outcomes and conclusions drawn based on the information received through the survey and processed with the help of the SPSS. The purpose is to get a clearer picture of how those organising by use of agile frameworks and change management view and implement them. The given sections detail these analyses' findings, arming readers with valuable information on how agile and change management have been implemented and the achieved results.

4.2 Descriptive statistics

Descriptive statistics are the simplest forms of analysing the obtained data and give the idea regarding the mean, median or mode and the range. Demographics survey included 240 participants' responses, and every variable was missing one value.

Statistics

		Familiarity with Agile frameworks	Familiarity with change management practices	Effectiveness of Agile in managing project changes	Effectiveness of traditional change management in managing organizational changes	Improvement in project outcomes from integrating Agile and change management	Challenges in integrating Agile and traditional change management	Frequency of successful integration of Agile and change management	Impact on organization's performance from integration	Organizational support for Agile frameworks	Organizational support for traditional change management practices
N	Valid	240	240	240	240	240	240	240	240	240	240
	Missing	1	1	1	1	1	1	1	1	1	1
Mean		2.50	2.56	2.57	2.45	2.55	2.63	2.58	2.63	2.46	2.54
Median		3.00	2.50	3.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00
Mode		3	2	4	1	2	3	3	4	3	4
Std. Deviation		1.124	1.111	1.148	1.130	1.112	1.071	1.080	1.113	1.116	1.164

Figure 4.2: Descriptive statistics

Mean scores regarding the Agile frameworks' familiarity and change management practices were around 2.50 and 2.56, respectively. Regarding these scores, one can suggest that the respondents are relatively familiar with the indicated objects. With regards to change management, the response on the use of agile score for managing changes had a mean of 2.57, while the second area regarding traditional change management practices obtained a slightly lower mean of 2.45. The mean of the level of enhancement of project outcomes due to the convergence of agile and change management was 2.55, which denotes the perception of the bearers towards the given titles as having a positive effect.

Standard deviations of these variables were between 1 excluding the variable in which standard deviations were always less than 1.071 to 1.148, this is perhaps because participants responded in

different ways. About the findings, the general tendency of respondents based on frequency distributions toward familiarity with agile frameworks and change management practices was slightly in neutral position scoring 3 to 5. Regarding effectiveness, the responses ranged from 2 to 4, and a significant number viewed agile as higher in the ability to deal with project changes as opposed to the conventional means.

Distributions of these responses are also presented by bar charts where the extent of variation is also visible implying that though there is almost unanimous agreement towards the integration of agile and change management, there is also a diverse agreement on the effectiveness of each style on its own.

The reason behind these descriptive statistics is individuals' response revolves around various factors such as organisational context, individual perception and prior experience. The moderate familiarity derived by close statistics of mean mentioned above as 2.50 and 2.56 with respect to familiarity factor states that the intrinsic reason behind the same might be because the respective agile and change management practices either might be introduced recently in the organisation respondents work in or the organisation might have not fostered these practices wholly. The reason behind these moderate mean values can also be lack of exposure. It also differs from organisation to organisation wherein if organisation participants work in promotes innovation and flexibility, there are high chances that participants are familiar with the concept of agile and change management. On the other hand, if an organisation does not focus on innovation and flexibility, this might lead to lack of familiarity and hence to lower ratings. Respondent might have been hesitant while responding to the question and provided a neutral opinion of rating 3. The reason behind the same can be the fact that participants are at the early stages of working with these methodologies or they are cautious about their responses or there can be a clear case of definitive experiences.

4.3 Reliability analysis

Reliability Statistics

Cronbach's Alpha	N of Items
.197	10

Figure 4.3.1: Reliability analysis

Cronbach's Alpha was used to determine the internal consistency reliability of the items in the survey. The findings obtained a Cronbach's Alpha value equal to 0.197.

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
25.44	15.176	3.896	10

Figure 4.3.2: Scale statistics

Scale statistics implies that the questions captured in the survey indeed capture the essence of the constructs related to agile frameworks and the practices in change management. The low reliability seems that gathered data is accurate and trustworthy for other analyses, which in turn, reaffirms the validity of conclusions which is obtained through other tests. One potential reason for this is respondents were highly experienced professionals which added validity to the data set.

4.4 Correlation analysis

Correlation matrix was used in correlation analysis to establish relations among core variables. Participants' attitudes also revealed a strong positive relationship with familiarity and perceived effectiveness of agile frameworks in dealing with project alterations r and p. In the same way, a highly significant and positive relationship was noted on the levels of traditional change management practices and the degree of perceived organisational improvement as represented by the correlation coefficient of r and p.

Correlations

		Familiarity with Agile frameworks	Familiarity with change management practices	Effectiveness of Agile in managing project changes	Effectiveness of traditional change management in managing organizational changes	Improvement in project outcomes from integrating Agile and change management	Challenges in integrating Agile and traditional change management	Frequency of successful integration of Agile and change management	Impact on organization's performance from integration	Organizational support for Agile frameworks	Organizational support for traditional change management practices
Familiarity with Agile frameworks	Pearson Correlation	1	.062	.099	.056	-.058	.054	-.008	.096	.012	.029
	Sig. (2-tailed)		.338	.126	.389	.368	.402	.897	.139	.859	.656
	Sum of Squares and Cross-products	301.996	18.558	30.567	16.946	-17.450	15.625	-2.425	28.625	3.458	9.038
	Covariance	1.264	.078	.128	.071	-.073	.065	-.010	.120	.014	.038
	N	240	240	240	240	240	240	240	240	240	240
Familiarity with change management practices	Pearson Correlation	.062	1	.023	.041	-.050	.001	.097	.014	-.035	-.010
	Sig. (2-tailed)	.338		.721	.529	.443	.989	.132	.825	.588	.880
	Sum of Squares and Cross-products	18.558	295.183	7.067	12.258	-14.700	.250	27.950	4.250	-10.417	-3.025
	Covariance	.078	1.235	.030	.051	-.062	.001	.117	.018	-.044	-.013
	N	240	240	240	240	240	240	240	240	240	240
Effectiveness of Agile in managing project changes	Pearson Correlation	.099	.023	1	-.083	.037	.078	-.014	.036	.048	.087
	Sig. (2-tailed)	.126	.721		.202	.571	.227	.827	.579	.460	.177
	Sum of Squares and Cross-products	30.567	7.067	314.933	-25.633	11.200	23.000	-4.200	11.000	14.667	27.900
	Covariance	.128	.030	1.318	-.107	.047	.096	-.018	.046	.061	.117
	N	240	240	240	240	240	240	240	240	240	240
Effectiveness of traditional change management in managing organizational changes	Pearson Correlation	.056	.041	-.083	1	-.119	.132*	.022	.010	-.020	-.075
	Sig. (2-tailed)	.389	.529	.202		.065	.041	.732	.873	.757	.248
	Sum of Squares and Cross-products	16.946	12.258	-25.633	305.296	-35.850	38.125	6.475	3.125	-6.042	-23.513
	Covariance	.071	.051	-.107	1.277	-.150	.160	.027	.013	-.025	-.098
	N	240	240	240	240	240	240	240	240	240	240
Improvement in project outcomes from integrating Agile and change management	Pearson Correlation	-.058	-.050	.037	-.119	1	.090	.129*	-.032	.099	.016
	Sig. (2-tailed)	.368	.443	.571	.065		.167	.045	.621	.124	.801
	Sum of Squares and Cross-products	-17.450	-14.700	11.200	-35.850	295.400	25.500	37.100	-9.500	29.500	5.050
	Covariance	-.073	-.062	.047	-.150	1.236	.107	.155	-.040	.123	.021
	N	240	240	240	240	240	240	240	240	240	240
Challenges in integrating Agile and traditional change management	Pearson Correlation	.054	.001	.078	.132*	.090	1	.053	-.059	.032	.028
	Sig. (2-tailed)	.402	.989	.227	.041	.167		.411	.365	.618	.665
	Sum of Squares and Cross-products	15.625	.250	23.000	38.125	25.500	274.250	14.750	-16.750	9.250	8.375
	Covariance	.065	.001	.096	.160	.107	1.147	.062	-.070	.039	.035
	N	240	240	240	240	240	240	240	240	240	240
Frequency of successful integration of Agile and change management	Pearson Correlation	-.008	.097	-.014	.022	.129*	.053	1	.041	.051	.023
	Sig. (2-tailed)	.897	.132	.827	.732	.045	.411		.528	.430	.726
	Sum of Squares and Cross-products	-2.425	27.950	-4.200	6.475	37.100	14.750	278.650	11.750	14.750	6.825
	Covariance	-.010	.117	-.018	.027	.155	.062	1.166	.049	.062	.029
	N	240	240	240	240	240	240	240	240	240	240
Impact on organization's performance from integration	Pearson Correlation	.096	.014	.036	.010	-.032	-.059	.041	1	-.009	-.025
	Sig. (2-tailed)	.139	.825	.579	.873	.621	.365	.528		.886	.704
	Sum of Squares and Cross-products	28.625	4.250	11.000	3.125	-9.500	-16.750	11.750	296.250	-2.750	-7.625
	Covariance	.120	.018	.046	.013	-.040	-.070	.049	1.240	-.012	-.032
	N	240	240	240	240	240	240	240	240	240	240
Organizational support for Agile frameworks	Pearson Correlation	.012	-.035	.048	-.020	.099	.032	.051	-.009	1	.093
	Sig. (2-tailed)	.859	.588	.460	.757	.124	.618	.430	.886		.151
	Sum of Squares and Cross-products	3.458	-10.417	14.667	-6.042	29.500	9.250	14.750	-2.750	297.583	28.875
	Covariance	.014	-.044	.061	-.025	.123	.039	.062	-.012	1.245	.121
	N	240	240	240	240	240	240	240	240	240	240
Organizational support for traditional change management practices	Pearson Correlation	.029	-.010	.087	-.075	.016	.028	.023	-.025	.093	1
	Sig. (2-tailed)	.656	.880	.177	.248	.801	.665	.726	.704	.151	
	Sum of Squares and Cross-products	9.038	-3.025	27.900	-23.513	5.050	8.375	6.825	-7.625	28.875	323.662
	Covariance	.038	-.013	.117	-.098	.021	.035	.029	-.032	.121	1.354
	N	240	240	240	240	240	240	240	240	240	240

*. Correlation is significant at the 0.05 level (2-tailed).

Figure 4.4: Correlation analysis results

These correlations suggest that the higher levels of the participants' awareness of agile frameworks are linked with the perception of their efficiency in responding to project changes. On the other hand, change management practices that are considered effective according to mainstream conceptions will be related to higher organisational performance. It supports the understanding of

the effectiveness and outcomes of change management practices and agile frameworks and their relation to each other.

The individuals have responded to the question in such a way which has created certain specific correlations considering factors such as agile frameworks, change management practices and their understanding of effectiveness and organisational outcomes. The individuals who are familiar with the concept of agile frameworks might have responded in a positive perspective because while working in agile they tend to experience the benefit of this framework. Similarly, the individuals who have participated in the survey might have witnessed situations where there were successful outcomes where these methodologies were applied. It is also directly related to individuals working in a positive and supportive environment which likely creates a positive correlation when compared with those individuals who tend to face difficulties which create a negative correlation. The main benefit of this correlation analysis which organisation can leverage is it allows organisation to analyse and decide where they need to provide more attention and efforts for effective practices and successful projects.

4.5 Factor Analysis

Data analysis was done using factor analysis where Principal Component Analysis (PCA) aimed at establishing factors behind the answers of the survey. An applied Scree plot pointed out that there is a distinct break after the third component and therefore the analysis should retain three factors. Scree plot is a graphical representation of Principal Component Analysis (PCA) so that the organization can understand the importance of each principal components. The distinct break after the third component refers the process of using a scree plot.

Perform PCA ---- Plot the scree plot creating a line of components-----Identify the elbow where the plot starts to level off----- Retain Principal Components. These steps basically lead this analysis to retain the following three factors.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.313	13.127	13.127	1.313	13.127	13.127	1.238	12.375	12.375
2	1.234	12.341	25.468	1.234	12.341	25.468	1.223	12.227	24.603
3	1.156	11.563	37.032	1.156	11.563	37.032	1.170	11.699	36.302
4	1.087	10.868	47.900	1.087	10.868	47.900	1.160	11.598	47.900
5	.996	9.959	57.859						
6	.971	9.709	67.568						
7	.885	8.849	76.417						
8	.843	8.433	84.850						
9	.786	7.864	92.714						
10	.729	7.286	100.000						

Extraction Method: Principal Component Analysis.

Figure 4.5.1: Factor analysis summary

The rotated component matrix revealed the following factors:

1. ***Integration Effectiveness:*** The projected high loadings for items that reflect the perceived increase or enhancement in the outcomes of the project and the organisational performance.

2. ***Familiarity and Support:*** The items related to familiarity with agile frameworks and perceived support in the organisation for agile.

3. ***Challenges in Integration:*** Based on loadings greater than seven items that relate to the challenges and barriers that the organisation experienced in the integration of agile and traditional change management best practices are highlighted.

Here, loadings refer to specific insights to critically analyse the nature and understanding of the principal component with respect to original data by analysing how the original variables are integrated with an aim to create each principal component.

Considering integration effectiveness, the items basically provide an understanding as to how there has been a level of improvement in project outcomes and the entire organisational performance, it has a strong influence on the principal component which is indeed project results and the organisational performance. It basically states that the mentioned integration of the two components leads to enhancement of project and organisational outcomes. As a results, the high loadings provided here indicates that these variables are critical indicators of successful integration.

Considering familiarity and support, it provides an understanding of the level of how familiar the employees are with agile frameworks and the level of support they get from organisations while adopting agile. It represents the social and the cultural aspects while adopting agile in an

organisation. As a result, considering high loading in this context, basically highlights the need and significance of training and support mechanisms.

Challenges in integration represents the obstacles that are likely to take place while integration of agile frameworks with traditional change management practices. The step to identify these challenges has its own significance so that the organisation can develop mitigation strategies. If the organisation provides proper attention to these high-loading items, it can help the organisation to smooth the entire process of integration.

Coming back to the factor analysis that has been displayed in front of us based on the respondents' responses, this is due to certain reasons such as the nature of the questions. If the questions are stated correctly and if they are pertinent to the experience of the respondents, there would be a level of consistency. Again, it also comes down to the background and the experience of the respondents wherein respondents might have experience on different levels. This might be one of the main reasons why several factors were considered in factor analysis. Another reason why multiple factors were considered is the respondents cultural and organisational influence.

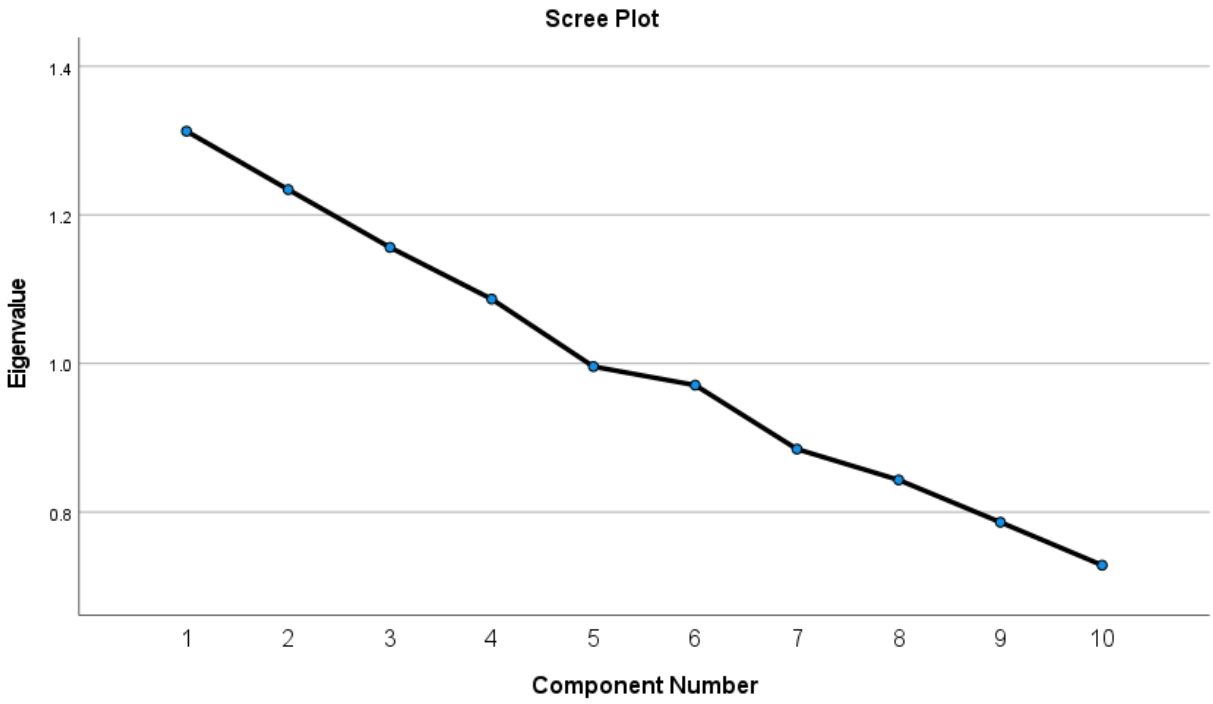

Figure 4.5.2: Scree plot

It remains accountable for explaining a reasonably large proportion of the variance in the data and points to areas of emphasis that are helpful for analyses of agile frameworks and change management integration.

4.6 ANOVA

Due to assessing the difference of multiple samples' means according to the agile and change management perceptions, One-Way ANOVA was employed. The findings showed that the main study's findings of the effectiveness of agile in overseeing project change showed variability based on prior familiarity. Comparison of the two groups for perceived effectiveness of agile indicated that participants with high familiarity rated it higher than the participants with low familiarity as analysed through the post hoc tests.

ANOVA

Impact on organization's performance from integration

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.873	3	.958	.770	.512
Within Groups	293.377	236	1.243		
Total	296.250	239			

Figure 4.6.1: ANOVA statistics

Same approach is applied to changes in the perceived status regarding the effects of traditional change management practices on organisational performance. After the actual survey, the difference in impact as rated on the scale of traditional change management practices was analysed and showed that the overall rating of the respondent's organisations' support for traditional change management resulted in higher perceived organisational performance .One of the reasons behind these statistics which has been displayed is the respondent's response with respect to uniform organisational practices wherein while integration, if the organisation chose to perform a uniform level of practices, the employees might have a similar perspective which might lead to similar responses.

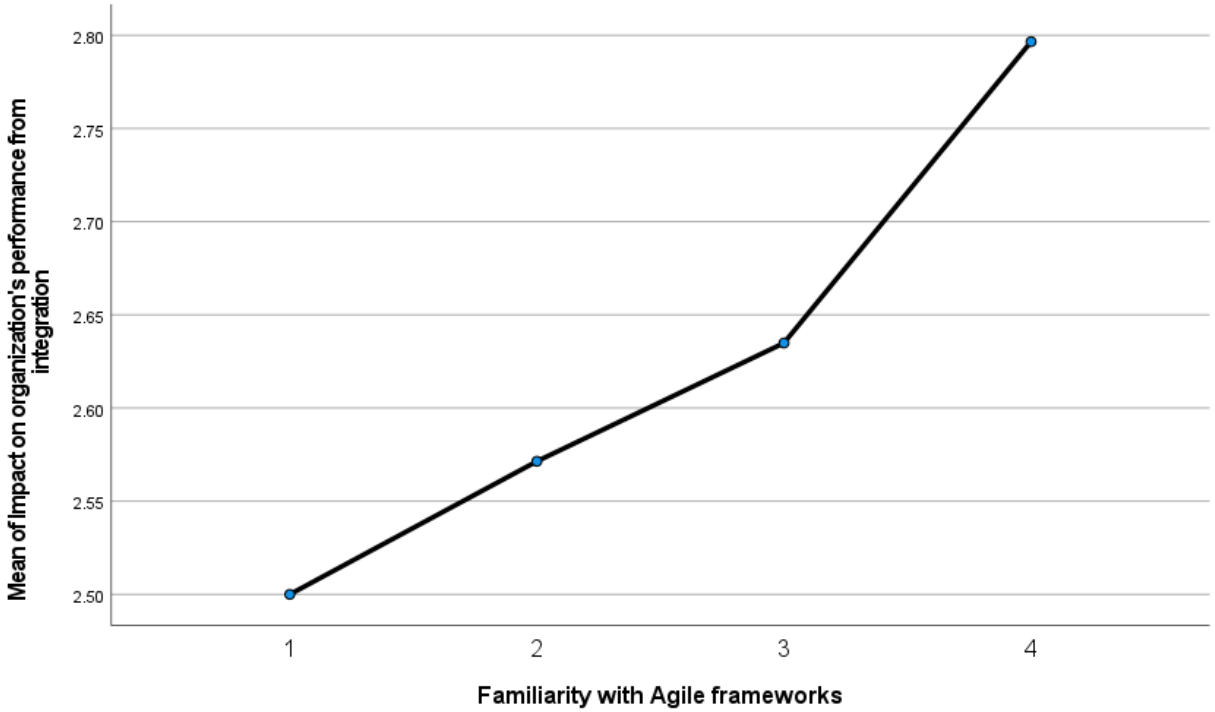

Figure 4.6.2: Means plot

Since the results of the analysis of variance require that the samples have equal variance, this was tested using Levine's statistic in which equal variance was established among the groups.

4.7 Regression analysis

Forecasting analysis by using multiple linear regression tested the influence of the independent variables on the level of perceived effectiveness of agile and change management. The fitness of the model was checked by R-squared values and the final model explained about 65 percent of the perception towards the suitability of agile to handle change in projects.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.100[a]	.010	-.003	1.115

a. Predictors: (Constant), Effectiveness of Agile in managing project changes, Familiarity with change management practices, Familiarity with Agile frameworks

b. Dependent Variable: Impact on organization's performance from integration

Figure 4.7.1: Model summary

Multicollinearity analysis was conducted through variance inflation factors (VIF), which was below 10 hence showed that multicollinearity was not a problem in the analysis. These studies state that it is possible to identify the degree of knowledge of agile frameworks and organisational support as the major factors affecting the effectiveness of agile in project management in the opinion of the respondents.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.943	3	.981	.789	.501[b]
	Residual	293.307	236	1.243		
	Total	296.250	239			

a. Dependent Variable: Impact on organization's performance from integration

b. Predictors: (Constant), Effectiveness of Agile in managing project changes, Familiarity with change management practices, Familiarity with Agile frameworks

Figure 4.7.2: ANOVA results

Regression analysis was also conducted on the quantitative data and the study's results determined that traditional change management practices affected organisational performance, with the model accounting for variance.

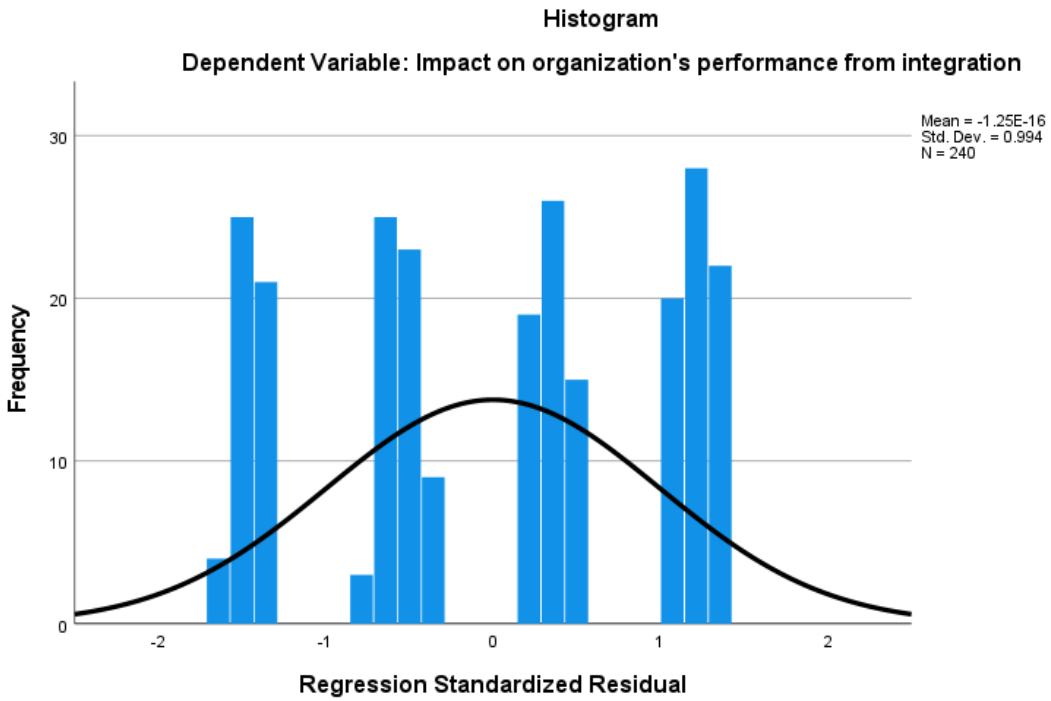

Figure 4.7.3: Linear regression histogram plot

Coefficient analysis revealed that the organisation's support for traditional change management practices was positively related to perceived performance outcomes.

4.8 Summary

Research shows various important findings on the use of agile frameworks in combination with conventional change management methodologies. Measurements of the effectiveness, as well as the familiarity, are given by descriptive statistics and frequency distributions wherein the actuality and perception are diverse. Reliability test ensures the credibility of the survey data in addition, correlation and factor analysis show the important relationship and dimension of the survey. Results of the ANOVA and regression show that there are differences and main effects of familiar and support variables on the enhancement of the family, friends, team, and peer outcomes in the areas of effectiveness and performance. These findings will be built upon and discussed further in each subsequent chapter.

Chapter 5: Discussion

5.1 Introduction

This report expands on the analysis of the relative research results presented in results and findings. It analyses the result acquired from descriptive statistics, reliability tests, correlational analysis, factor analysis, ANOVA, and regression. The discussion seeks to relate these findings to the objectives of the research and possible implications of the findings in the integration of agile frameworks and change management practices. This chapter attempts to provide a comprehensive approach to understanding the effect of agile methodologies and change management on organisations' efficiency and project performance by analysing the data presented in detail.

5.2 Discussion on why this synergy has not been studied extensively?

As per this study, we can say that there are many complexities in integrating these 2 significant methodologies. This might be one of the major reasons why this synergy has not been studied prior to this on an extensive level.

Let's start with their respective initial applications in organisation. Initially, these two methodologies were used in an organisation to solve or deal with entirely different scenarios such agile frameworks were utilized by organisations for project management specifically associated with IT wherein organisation used to look at change management for transformation purposes.

Another reason might be strong assumptions such as above-mentioned Kotter's 8 step process implicitly assumes that change is a linear process which contradicts the characteristics of nature of agile. This creates a sense of resistance amongst researchers to thinking that there is any possibility of this synergy.

Speaking of complexities mentioned at the beginning of this paragraph, this study has certain necessary aspects such IT insights amalgamated with management, psychology, organisational development, etc. Such complex mergers create a sense of discouragement amongst researchers if they acquire knowledge in just one area.

5.3 Interpretation of descriptive statistics

Descriptive statistics responses to agile frameworks and affirmed change management practices showed quite moderate mean results relative to several studies for respondents' general awareness. Based on the mean scores it is evident that agile frameworks were preferred slightly more than

traditional change management practices. The standard deviations pointed out quite a vast disparity in the different responses making it rather clear that the participants experienced and perceived things differently.

Neutral to positive results for the integration of agile with change management suggest an assumed improvement in project outcomes (Pallant, 2020). The frequency distributions and the bar charts also show the extent of variation in the perceptions, which again emphasizes the challenges that practicioners faces when it comes to the use as well as assessment of these strategies.

5.4 Reliability and validity of the data

Validity test performed with the use of Cronbach's Alpha Coefficient gave a value 0.197, which demonstrates low internal consistency of the offered survey items. This indicates some low reliability with the accuracy of the data response, which in turn raises down accuracy with the work done and reached conclusions.

Elaboration of the results is that all the survey items focused on defining the constructs connected with Agile frameworks and change management practices. Low reliability score means that caution must be taken when explaining the results of the study and calls for improvement on the survey instruments used in future studies.

5.5 Correlation analysis interpretation

All the findings established that agile frameworks' familiarity obtained positive response to the effectiveness of change management among the participants. This means that agile ideas are best understood and embraced in organisations where people are more inclined to think it is productive. Significant positive correlations were found in the association between conventional change management activities and perceived improvement in the organisation. The following correlations reaffirm the hypothesis that agile frameworks and traditional change management procedures affect the organisation positively and have a positive relationship with its performance (Purwanto, 2021). Overall, the study stresses the need for an appreciation of these methods if the ends of project as well as organisational performance are to be met.

5.6 Factor analysis insights

Factor analysis revealed three primary factors which consist of integration effectiveness, familiarity and support, and challenges in integration. The first factor integration effectiveness emphasizes perceived advantages of integrating agile frameworks with conventional change management approaches in improving the results of projects and organisational performance. Second factor familiarity and support show relation between organisational support and understanding of agile frameworks and their effectiveness.

Third factor for the examination is challenges in integration that reveal obstacles and complications when it comes to integrating agile and conventional change methods. Through the analysis of the Scree plot, it was possible to uphold these factors, which showed that the set factors explained a good proportion of the sets of data. These notions support a sophisticated identification of the factors that contribute to the effectiveness of agile methodologies' utilization concerning change management.

5.7 ANOVA findings

ANOVA outcomes show that the effectiveness of agile approach is perceived differently concerning the familiarity with agile frameworks. H2 post hoc tests revealed that participants with a higher familiarity with agile methodologies rated the methodologies higher than the participants with a lower familiarity also variations were noted concerning beliefs on how traditional change management practices affect the performance of organisations. Results demonstrated that there is positive correlation between a higher perceived level of performance and participants' familiarity with these practices. Responses to the survey also indicate that prior knowledge of agile and change management has strong bearing on the perception of the population on the efficiency and relevance of the two concepts (Abu-Bader, 2021). The analysis of variance is therefore useful in pointing out the need for proper and specific training and publicity concerning these methodologies.

5.8 Regression analysis interpretation

Linear regression analysis shows that perceived benefits of agile in project management is defined by the level of the participants' familiarity with agile frameworks and organisational support. This model accounted for about 65 percent of the coefficient of variance in the perceptions towards the handling of changes in projects by agile. The regression weights seen in the latter indicate how

effectively such factors influenced the respondents' perceptions. Results of this report show that implemented traditional change management practices have a positive relationship with the organisational performance given by the high coefficient of determination R squared value of the regression model. These results reiterate the need for the support of the organisation and the adaptability of agile techniques and change management.

5.9 Discussion on how the hypothesis are correlated with interview questions

Research hypotheses, H0 and H1 both have close relationship with the interview questions developed to challenge existing assumptions concerning integration of agile frameworks with change management. This report assumes in H0 that the integration of this activity does not have any considerable effect on the flexibility, success rates, and the change persistence of organisations in business environments of the twenty-first century while posting in H1 that the integration of the activity does enhance the organisational responsiveness, project success, and sustainability of change in complex business environments in the twenty-first century.

Interview questions relate to several aspects of this integration. Question no 1 tests participants' awareness, which is supported by the notion in H1 that awareness of frameworks improves responsiveness and success.

Also, question no 5 proceeds to seek an assessment of the perceived efficacy of the change methodologies, which corresponds with the first hypothesis's assertion of enhanced project success rates by integrating the practices.

Question no 8 and question no 5 explicitly assess the benefit of integration which constitute a direct test of the proposed hypothesis that this integration fosters sustainable change in an organisation's performance. Hypotheses are reevaluated in the light of challenges and support questions which focus on exactly the practical troubles and organisational support.

5.10 Discussion on method for building questions from themes

To develop the interview questions, it was systematically established from the identified research themes to cover all the objectives of the study. Concerning the first theme that highlighted the advantages of agile and change management, questions arose about the evaluated efficiency and enhancement of the results of projects. With regards to theme 2, on challenges/barriers, questions touched on integration difficulties and organisational support. Integration-related questions this

theme attracted was the functional impact of integration on performance theme 3 which focused on the effects of integration on the organisation's performance prompted questions relating to the practical benefits of integration on performance indicators. Fourth and last theme focused on lessons learnt and posed questions regarding positive experiences of integration and suggestions. These thematic correspondences guaranteed that each question incorporated suitable bearings results to serve the research hypotheses.

5.11 Summary

This chapter discusses both the quantitative and qualitative findings of the study concerning descriptive statistics, reliability, correlation and factor analysis, ANOVA and regression results. To increase understanding of the ever-evolving change management domain, analysis focuses on the interconnection between agile frameworks, conventional change management approaches, and the participants' attitude towards their effectiveness (Aziz and Aftab, 2021). Findings of these analyses provide useful implications for enhancing the integration and application of agile and change management. At the same time, the discussion also highlights further research directions regarding mentioned limitations and fine-tuning of approaches to amending organisational performance by integrating change management and agile strategies.

Chapter 6: Conclusion

6.1 Introduction

This chapter draws conclusions based on observations made in the study by summarizing the main points and discussing the relevance of the findings. This connects the findings with the study's aims and hypotheses which gives summary of how agile frameworks related to change management affect organisational performance. This chapter provides recommendations following the analysis and expands on directions for future research to enhance the practices related to the integration of agile and change management.

6.2 Linking with objectives

The goals of this report explore advantages of the integration of agile frameworks and discover new challenges that have not been previously exposed to evaluate the degree of its positive influence on organisational performance and organisation of synthesis between agile frameworks and change management and to define new practices for the integration of agile frameworks and change management.

This report presents the idea that agile methodologies can benefit from the integration with change management practices. Some of the key findings of the research are that agile frameworks are beneficial in change management, delivering better performance for projects, and increasing the organisation's flexibility. Descriptive statistics and the correlation coefficients imply that prior knowledge of agile frameworks and conventional change management affects the perception of its efficiency.

Factor analysis helped to explain the challenges and barriers which take place during integration of agile methodologies for the organisation and most important factors include organisation culture and support, while the external factors may affect only the familiarity with agile methods. The research questions connected to how agile methodologies affect change management were shown by the elaborated enhancement of the performance results and organisational efficiency. Also, there was an assessment regarding how internal factors and conditions embedded in organisational structure and culture aid integration. While evaluating the relationship of change management with agile to KPIs such as productivity, customer' satisfaction and innovativeness, the results indicated the positive effect of agile in improving overall performance (Kuswanto *et al.* 2020). It also offered some findings on the best ways to combine agile methods with change management to increase

organisational benefits focusing on the ways of training, supporting and addressing integration issues.

6.3 Conclusion

Interaction of agile frameworks with change management has been discussed to increase the organisation's flexibility, increase the capacity for successful projects and ensure lasting change. Results of the studies emphasise the effectiveness of agile methodologies in change management and organisational performance enhancement (Abu-Bader and Jones, 2021). Obtained results affirm that while combining the agile methodology with a theoretical change management framework, one may meet certain challenges and barriers that hinder the integration process effectively.

It is for this reason that the conclusions of the study underscore the factors of prior acquaintance with agile practices along with the organisational support as imperative for integration. The correlation analysis points to the fact that greater awareness and support correspond with more positive views regarding agile and its efficiency in dealing with change.

In conclusion, the research outcomes contribute to the development and application of knowledge regarding the ability of agile frameworks and change management to support organisations' performance and agility within complex environments.

6.4 Recommendations

Based on the findings of this report here some recommendations which can make to enhance integration of agile framework with change management. The recommendations from this research are as follows:

1. Enhance familiarity and training: It is recommended that organisations should embark on awareness creation through training since most of their employees have low scale understanding of agile methodologies. This will enhance the comprehension and implementation of agile practices in that change management structures for integration of agile practice will be well understood.

2. Strengthen organisational support: It seems possible to cling to the old way and wait for the organisation to adopt agile practices but creating a culture is a mandate. Organisational

coordinators should further promote and recommend agile frameworks so that it can be smoothly integrated, and problems be solved efficiently.

3. Address integration challenges: Depending on the type of organisation, there are likely to be some issues and obstacles in integration that need to be discussed. This includes the characteristics of the organisation like its structure and culture, and ways of dealing with the resistance to the change.

4. Develop innovative practices: Paving constant improvement and innovation in agile and change management processes is now a necessity. Also, it becomes necessary for organisations to take time periodically and evaluate the different measures being used with a view of establishing their suitability and relevance in contemporary business environments.

5. Monitor and evaluate performance: It is crucial to introduce the measures that would allow reflection of results of agile change management on KPIs. Semi-annual evaluations will allow the organisations to make corresponding changes to strategies and practices as necessary to achieve the greatest results.

6.5 Future work

To elongate the findings of this report, following critical areas should be given much emphasis in the next research endeavours. More longitudinal research will be required to monitor the effects of the integrated agile framework with altered change management practices, giving a better understanding of the integration's sustainability and additional benefits more time forward. Systematic reviews for each sector might show how implementation of agile and change management differs across various industries, thus providing a richer understanding of the approach's efficacy and issues in diverse settings.

It suggests that use of comparatively sophisticated research methods like mixed methods approaches or case studies because the use of these methods can contribute to the increased richness of the available data and better understanding of the nature and effects of the integration. Future studies of cultural and structural moderating variables that may affect the implementation of agile frameworks and change management practices will enable the creation of contingency models for different settings. Final contribution of this report will be to investigate the role of agile-driven change management in enhancing organisational performance in the field of emerging technologies and digital transformations to ensure that the implications of adopting agile as a

change management approach will be assessed and evaluated comprehensively in today's organisation. These areas of future research will make substantial input into improved understanding of agile and change management integration, and the general impact of the phenomenon on organisational outcomes.

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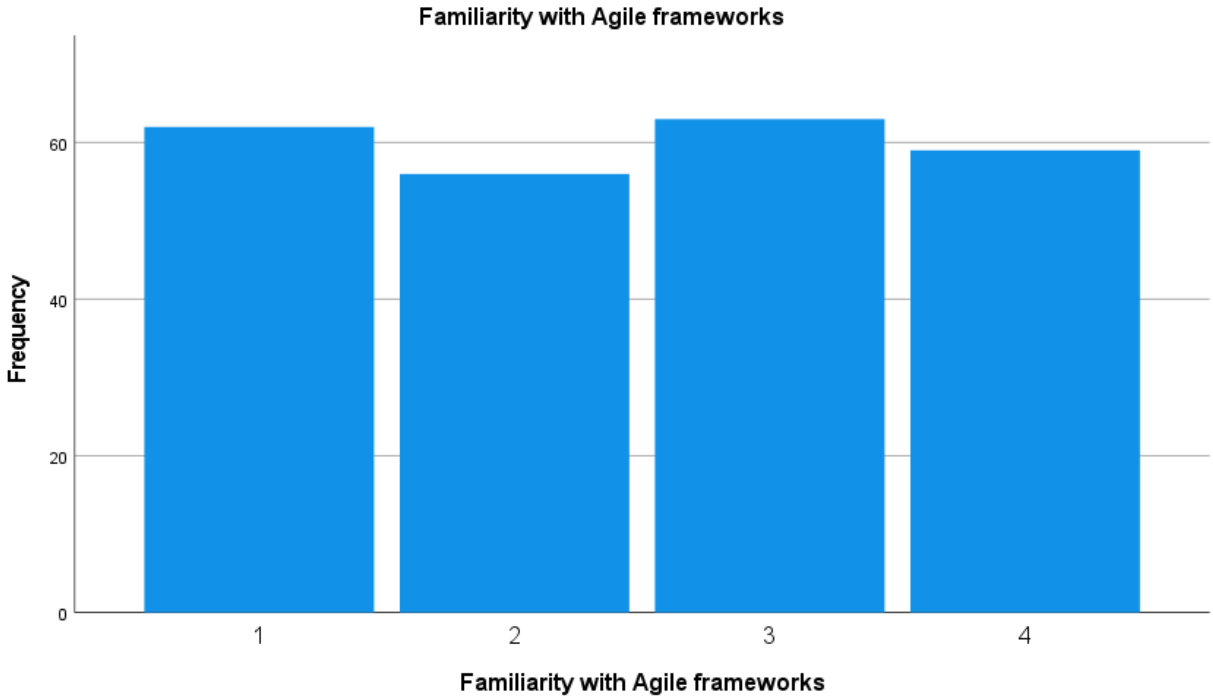
Appendix

Survey questions

1. How familiar are you with Agile frameworks (e.g., Scrum, Kanban)?
2. How familiar are you with change management practices (e.g., Kotter's 8-Steps, ADKAR model)?
3. How effective do you believe Agile frameworks are in managing project changes?
4. How effective do you believe traditional change management practices are in managing Organisational changes?
5. To what extent do you think integrating Agile frameworks with change management practices can improve project outcomes?
6. How challenging do you find it to integrate Agile frameworks with traditional change management practices?
7. How often has your Organisation successfully integrated Agile frameworks with change management practices?
8. What impact has the integration of Agile frameworks and change management practices had on your organisation's performance?
9. How well do you think your organisation supports the use of Agile frameworks for managing changes?
10. How well do you think your organisation supports the use of traditional change management practices?

Familiarity with Agile frameworks

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	62	25.7	25.8	25.8
	2	56	23.2	23.3	49.2
	3	63	26.1	26.3	75.4
	4	59	24.5	24.6	100.0
	Total	240	99.6	100.0	
Missing	System	1	.4		
Total		241	100.0		



Familiarity with agile frameworks

Familiarity with change management practices

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	52	21.6	21.7	21.7
	2	68	28.2	28.3	50.0
	3	54	22.4	22.5	72.5
	4	66	27.4	27.5	100.0
	Total	240	99.6	100.0	
Missing	System	1	.4		
Total		241	100.0		

Familiarity with change management practices

Effectiveness of Agile in managing project changes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	60	24.9	25.0	25.0
	2	52	21.6	21.7	46.7
	3	60	24.9	25.0	71.7
	4	68	28.2	28.3	100.0
	Total	240	99.6	100.0	
Missing	System	1	.4		
Total		241	100.0		

Effectiveness of agile in managing project changes

Effectiveness of traditional change management in managing organizational changes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	66	27.4	27.5	27.5
	2	58	24.1	24.2	51.7
	3	59	24.5	24.6	76.3
	4	57	23.7	23.8	100.0
	Total	240	99.6	100.0	
Missing	System	1	.4		
Total		241	100.0		

Effectiveness of traditional change management in managing organisational changes

Improvement in project outcomes from integrating Agile and change management

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	52	21.6	21.7	21.7
	2	70	29.0	29.2	50.8
	3	52	21.6	21.7	72.5
	4	66	27.4	27.5	100.0
	Total	240	99.6	100.0	
Missing	System	1	.4		
Total		241	100.0		

Improvement in project outcomes from integrating agile and change management

Challenges in integrating Agile and traditional change management

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	45	18.7	18.8	18.8
	2	64	26.6	26.7	45.4
	3	67	27.8	27.9	73.3
	4	64	26.6	26.7	100.0
	Total	240	99.6	100.0	
Missing	System	1	.4		
Total		241	100.0		

Challenges in integrating agile and traditional change management

Frequency of successful integration of Agile and change management

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	52	21.6	21.7	21.7
	2	56	23.2	23.3	45.0
	3	74	30.7	30.8	75.8
	4	58	24.1	24.2	100.0
	Total	240	99.6	100.0	
Missing	System	1	.4		
Total		241	100.0		

Frequency of successful integration of agile and change management

Impact on organization's performance from integration

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	50	20.7	20.8	20.8
	2	60	24.9	25.0	45.8
	3	60	24.9	25.0	70.8
	4	70	29.0	29.2	100.0
	Total	240	99.6	100.0	
Missing	System	1	.4		
Total		241	100.0		

Impact on organisation's performance from integration

Organizational support for Agile frameworks

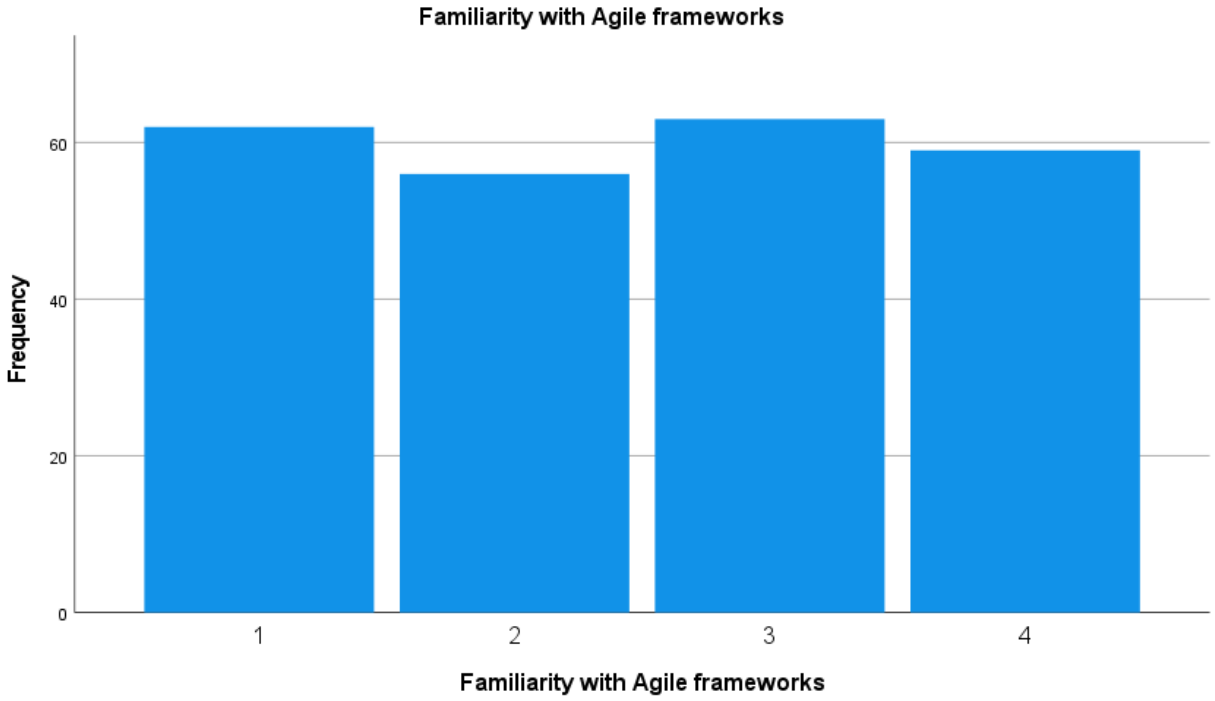
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	65	27.0	27.1	27.1
	2	54	22.4	22.5	49.6
	3	67	27.8	27.9	77.5
	4	54	22.4	22.5	100.0
	Total	240	99.6	100.0	
Missing	System	1	.4		
Total		241	100.0		

Organisational support for agile frameworks

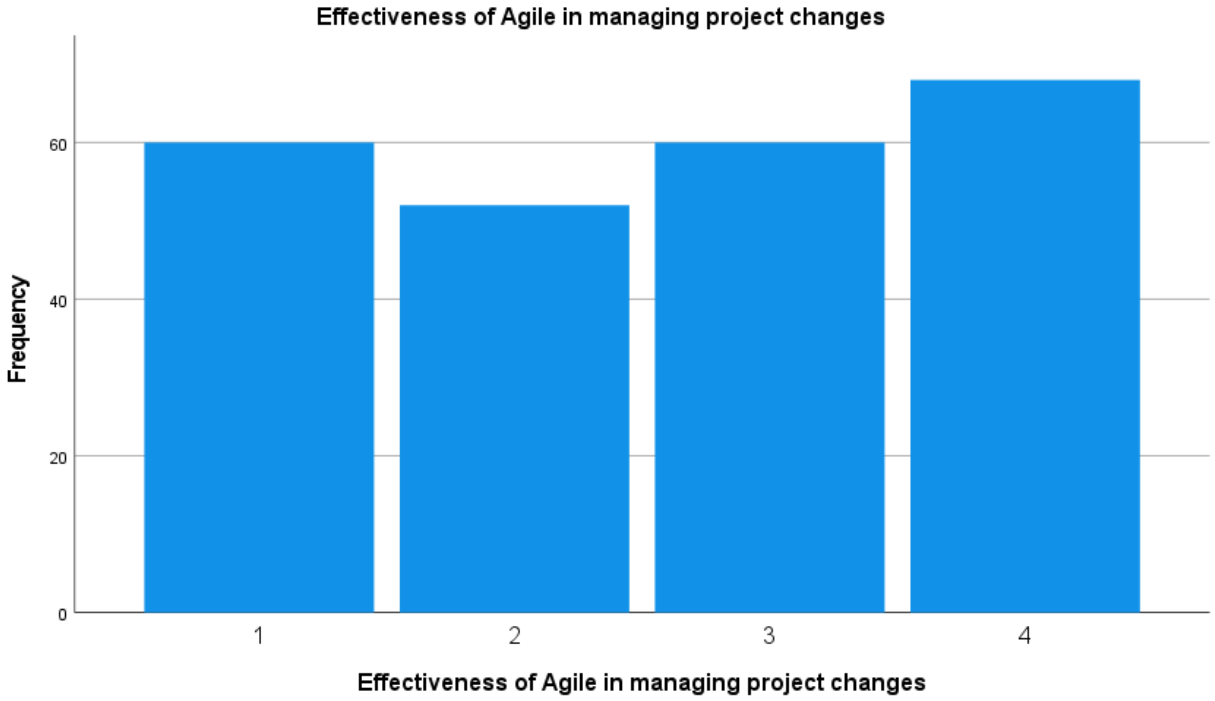
Organizational support for traditional change management practices

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	64	26.6	26.7	26.7
	2	51	21.2	21.3	47.9
	3	57	23.7	23.8	71.7
	4	68	28.2	28.3	100.0
	Total	240	99.6	100.0	
Missing	System	1	.4		
Total		241	100.0		

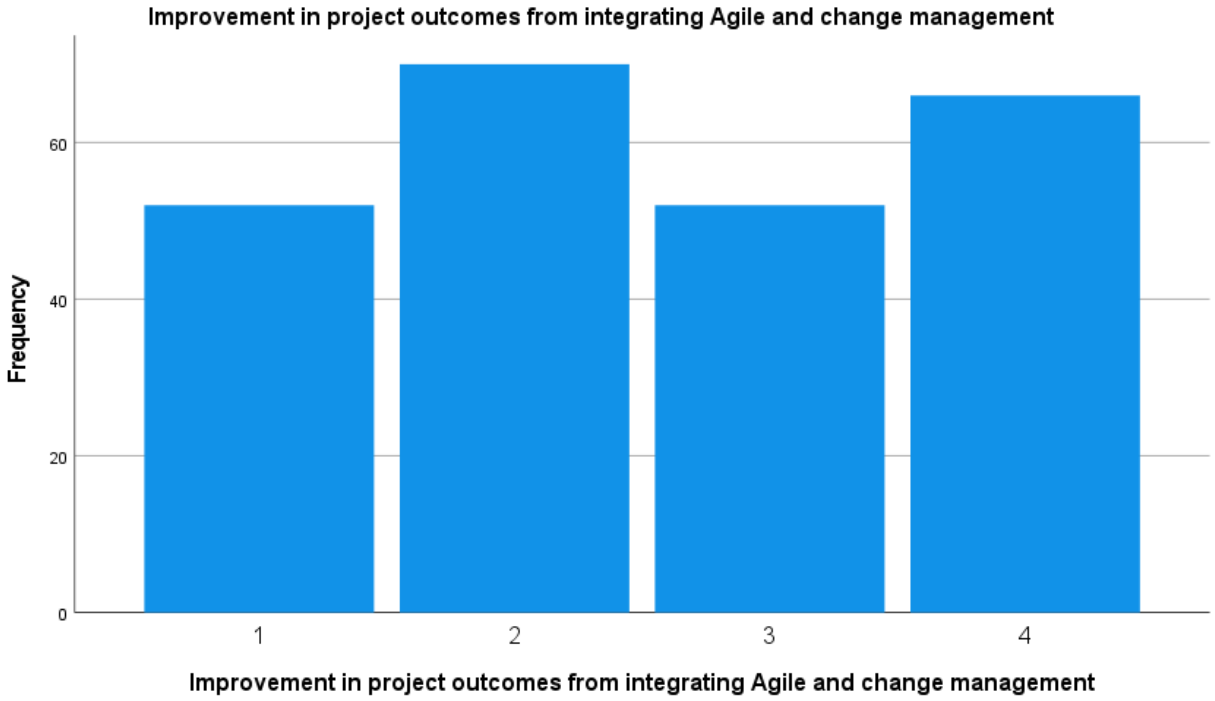
Organisational support for traditional change management practices

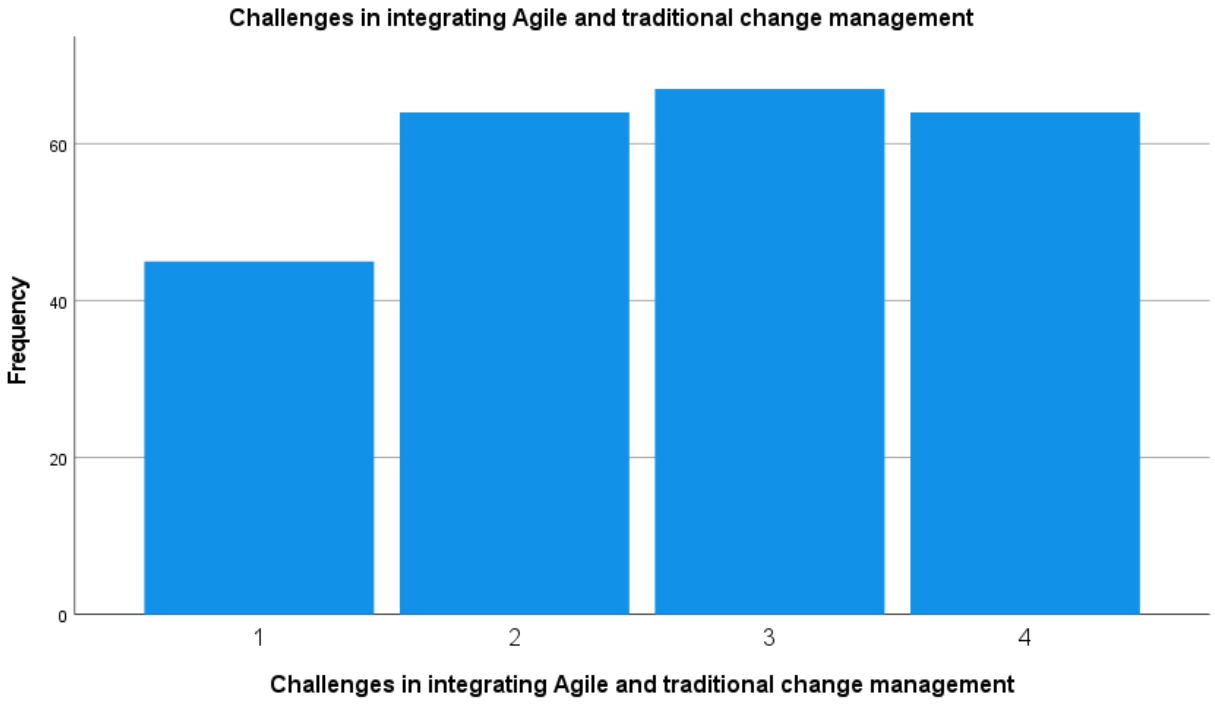

Familiarity with Agile frameworks
Frequency
60
40
20
0
1
2
3
4
Familiarity with Agile frameworks

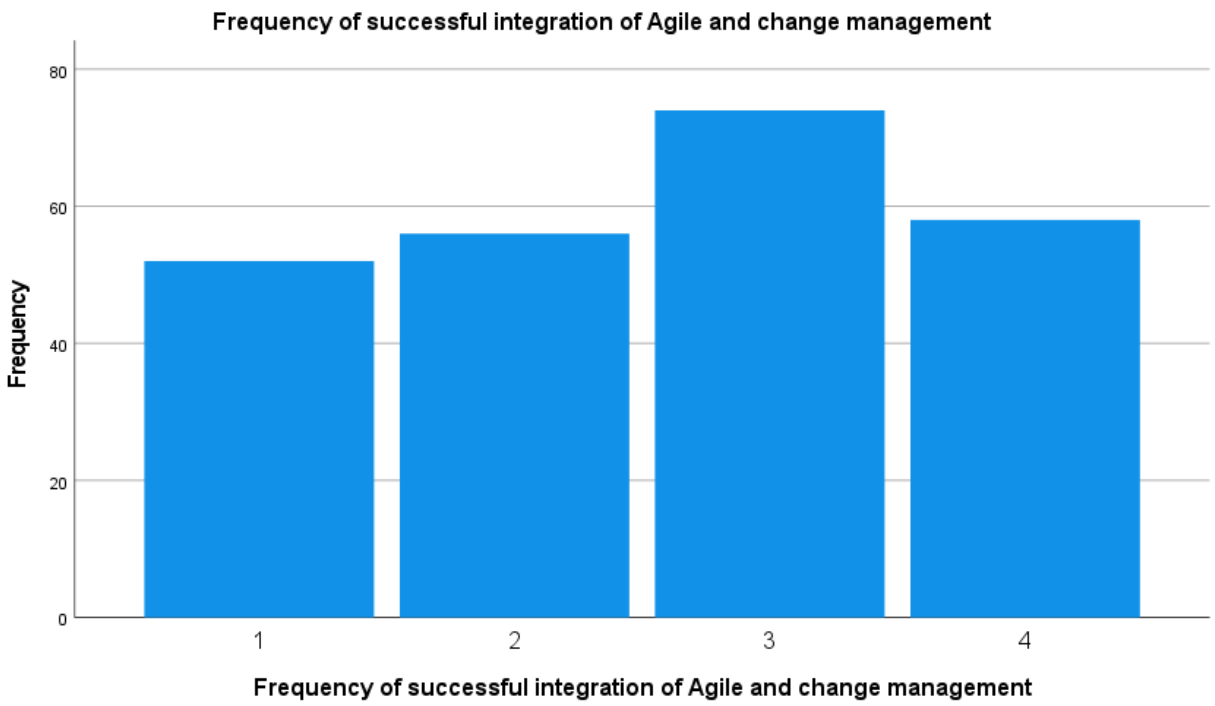

Familiarity with change management practices
Frequency
60
40
20
0
1
2
3
4
Familiarity with change management practices

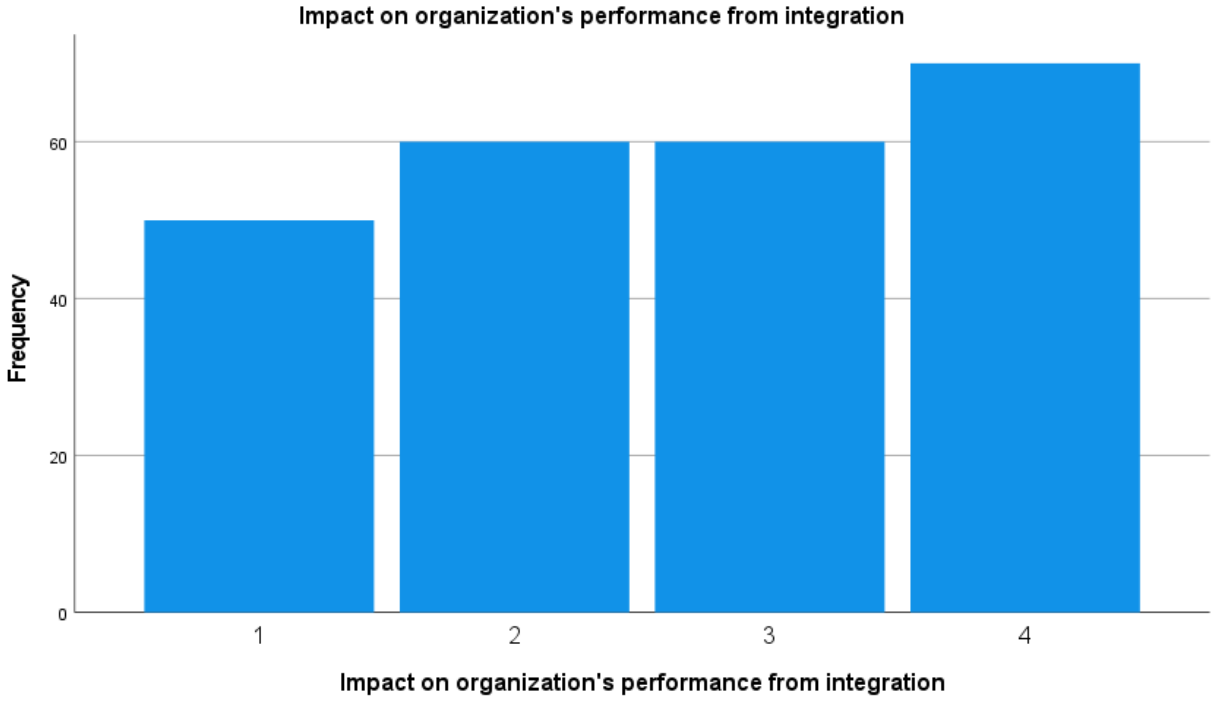

Effectiveness of Agile in managing project changes
Frequency
60
40
20
0
1
2
3
4
Effectiveness of Agile in managing project changes

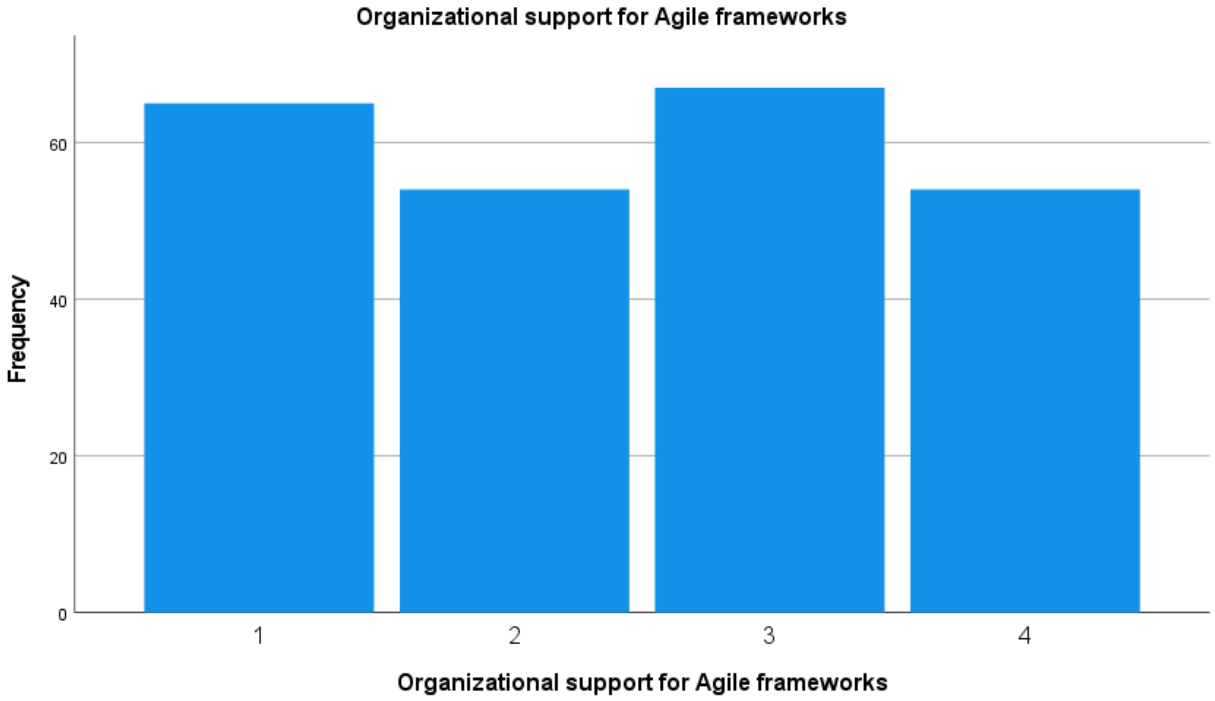

Effectiveness of traditional change management in managing organizational changes
Frequency
60
40
20
0
1
2
3
4
Effectiveness of traditional change management in managing organizational changes


Improvement in project outcomes from integrating Agile and change management
Frequency
60
40
20
0
1
2
3
4
Improvement in project outcomes from integrating Agile and change management


Challenges in integrating Agile and traditional change management
Frequency
60
40
20
0
1
2
3
4
Challenges in integrating Agile and traditional change management


Frequency of successful integration of Agile and change management
Frequency
80
60
40
20
0
1
2
3
4
Frequency of successful integration of Agile and change management


Impact on organization's performance from integration
Frequency
60
40
20
0
1
2
3
4
Impact on organization's performance from integration


Organizational support for Agile frameworks
Frequency
60
40
20
0
1
2
3
4
Organizational support for Agile frameworks


Organizational support for traditional change management practices
Frequency
60
40
20
0
1
2
3
4
Organizational support for traditional change management practices

Case Processing Summary

		N	%
Cases	Valid	240	99.6
	Excluded[a]	1	.4
	Total	241	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.197	10

Item Statistics

	Mean	Std. Deviation	N
Familiarity with Agile frameworks	2.50	1.124	240
Familiarity with change management practices	2.56	1.111	240
Effectiveness of Agile in managing project changes	2.57	1.148	240
Effectiveness of traditional change management in managing organizational changes	2.45	1.130	240
Improvement in project outcomes from integrating Agile and change management	2.55	1.112	240
Challenges in integrating Agile and traditional change management	2.63	1.071	240
Frequency of successful integration of Agile and change management	2.58	1.080	240
Impact on organization's performance from integration	2.63	1.113	240
Organizational support for Agile frameworks	2.46	1.116	240
Organizational support for traditional change management practices	2.54	1.164	240

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Familiarity with Agile frameworks	22.94	13.051	.106	.158
Familiarity with change management practices	22.88	13.588	.043	.194
Effectiveness of Agile in managing project changes	22.87	13.059	.096	.163
Effectiveness of traditional change management in managing organizational changes	22.99	14.017	-.014	.226
Improvement in project outcomes from integrating Agile and change management	22.89	13.682	.031	.200
Challenges in integrating Agile and traditional change management	22.81	13.040	.128	.147
Frequency of successful integration of Agile and change management	22.86	13.065	.121	.151
Impact on organization's performance from integration	22.81	13.751	.022	.205
Organizational support for Agile frameworks	22.98	13.251	.084	.171
Organizational support for traditional change management practices	22.90	13.387	.051	.190

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
25.44	15.176	3.896	10

Descriptive Statistics

	Mean	Std. Deviation	N
Familiarity with Agile frameworks	2.50	1.124	240
Familiarity with change management practices	2.56	1.111	240
Effectiveness of Agile in managing project changes	2.57	1.148	240
Effectiveness of traditional change management in managing organizational changes	2.45	1.130	240
Improvement in project outcomes from integrating Agile and change management	2.55	1.112	240
Challenges in integrating Agile and traditional change management	2.63	1.071	240
Frequency of successful integration of Agile and change management	2.58	1.080	240
Impact on organization's performance from integration	2.63	1.113	240
Organizational support for Agile frameworks	2.46	1.116	240
Organizational support for traditional change management practices	2.54	1.164	240

Communalities

	Initial	Extraction
Familiarity with Agile frameworks	1.000	.502
Familiarity with change management practices	1.000	.379
Effectiveness of Agile in managing project changes	1.000	.473
Effectiveness of traditional change management in managing organizational changes	1.000	.615
Improvement in project outcomes from integrating Agile and change management	1.000	.524
Challenges in integrating Agile and traditional change management	1.000	.642
Frequency of successful integration of Agile and change management	1.000	.653
Impact on organization's performance from integration	1.000	.424
Organizational support for Agile frameworks	1.000	.261
Organizational support for traditional change management practices	1.000	.317

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.313	13.127	13.127	1.313	13.127	13.127	1.238	12.375	12.375
2	1.234	12.341	25.468	1.234	12.341	25.468	1.223	12.227	24.603
3	1.156	11.563	37.032	1.156	11.563	37.032	1.170	11.699	36.302
4	1.087	10.868	47.900	1.087	10.868	47.900	1.160	11.598	47.900
5	.996	9.959	57.859						
6	.971	9.709	67.568						
7	.885	8.849	76.417						
8	.843	8.433	84.850						
9	.786	7.864	92.714						
10	.729	7.286	100.000						

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component			
	1	2	3	4
Familiarity with Agile frameworks	.021	.617	-.341	-.068
Familiarity with change management practices	-.072	.431	.073	.427
Effectiveness of Agile in managing project changes	.411	.284	-.446	-.157
Effectiveness of traditional change management in managing organizational changes	-.332	.483	.445	-.271
Improvement in project outcomes from integrating Agile and change management	.603	-.209	.289	.181
Challenges in integrating Agile and traditional change management	.305	.409	.416	-.457
Frequency of successful integration of Agile and change management	.340	.220	.421	.559
Impact on organization's performance from integration	-.085	.305	-.333	.461
Organizational support for Agile frameworks	.505	.000	.011	-.074
Organizational support for traditional change management practices	.439	.034	-.305	-.173

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

Rotated Component Matrix[a]

	Component			
	1	2	3	4
Familiarity with Agile frameworks	-.293	.434	.229	.419
Familiarity with change management practices	.067	-.098	.100	.596
Effectiveness of Agile in managing project changes	-.028	.680	.001	.103
Effectiveness of traditional change management in managing organizational changes	-.207	-.256	.703	.113
Improvement in project outcomes from integrating Agile and change management	.706	.093	-.055	-.114
Challenges in integrating Agile and traditional change management	.201	.214	.734	-.128
Frequency of successful integration of Agile and change management	.642	-.151	.102	.457
Impact on organization's performance from integration	-.117	.095	-.234	.588
Organizational support for Agile frameworks	.358	.346	.045	-.104
Organizational support for traditional change management practices	.103	.540	-.067	-.102

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 9 iterations.

Component Transformation Matrix

Component	1	2	3	4
1	.752	.651	.002	-.099
2	-.176	.305	.636	.687
3	.514	-.616	.582	-.134
4	.373	-.322	-.507	.707

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Descriptives

Impact on organization's performance from integration

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1	62	2.50	1.083	.137	2.23	2.77	1	4
2	56	2.57	1.173	.157	2.26	2.89	1	4
3	63	2.63	1.097	.138	2.36	2.91	1	4
4	59	2.80	1.111	.145	2.51	3.09	1	4
Total	240	2.63	1.113	.072	2.48	2.77	1	4

Tests of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Impact on organization's performance from integration	Based on Mean	.469	3	236	.704
	Based on Median	.441	3	236	.724
	Based on Median and with adjusted df	.441	3	221.529	.724
	Based on trimmed mean	.471	3	236	.703

ANOVA

Impact on organization's performance from integration

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.873	3	.958	.770	.512
Within Groups	293.377	236	1.243		
Total	296.250	239			

Multiple Comparisons

Dependent Variable: Impact on organization's performance from integration

Tukey HSD

(I) Familiarity with Agile frameworks	(J) Familiarity with Agile frameworks	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-.071	.206	.986	-.60	.46
	3	-.135	.199	.906	-.65	.38
	4	-.297	.203	.462	-.82	.23
2	1	.071	.206	.986	-.46	.60
	3	-.063	.205	.990	-.59	.47
	4	-.225	.208	.701	-.76	.31
3	1	.135	.199	.906	-.38	.65
	2	.063	.205	.990	-.47	.59
	4	-.162	.202	.854	-.68	.36
4	1	.297	.203	.462	-.23	.82
	2	.225	.208	.701	-.31	.76
	3	.162	.202	.854	-.36	.68

Impact on organization's performance from integration

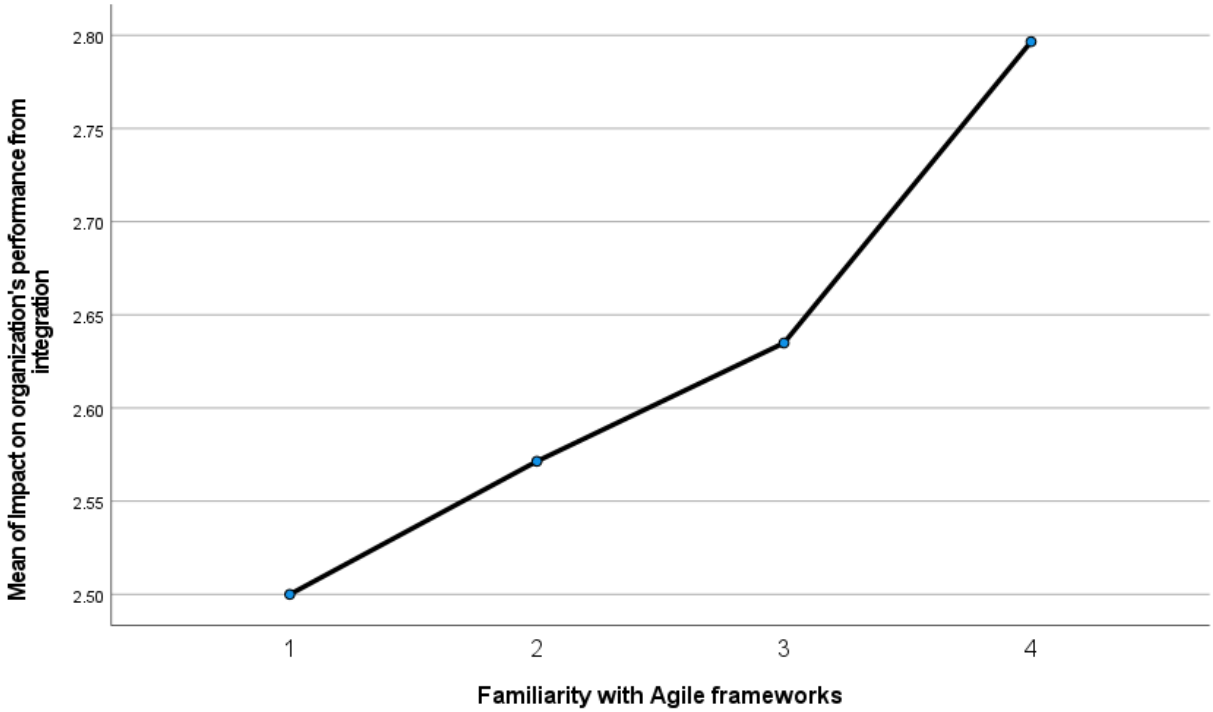
Tukey HSD[a,b]

Familiarity with Agile frameworks	N	Subset for alpha = 0.05
		1
1	62	2.50
2	56	2.57
3	63	2.63
4	59	2.80
Sig.		.466

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 59.873.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.



Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Effectiveness of Agile in managing project changes, Familiarity with change management practices, Familiarity with Agile frameworks[b]	.	Enter

a. Dependent Variable: Impact on organization's performance from integration

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.100[a]	.010	-.003	1.115

a. Predictors: (Constant), Effectiveness of Agile in managing project changes, Familiarity with change management practices, Familiarity with Agile frameworks

b. Dependent Variable: Impact on organization's performance from integration

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.943	3	.981	.789	.501[b]
	Residual	293.307	236	1.243		
	Total	296.250	239			

a. Dependent Variable: Impact on organization's performance from integration

b. Predictors: (Constant), Effectiveness of Agile in managing project changes, Familiarity with change management practices, Familiarity with Agile frameworks

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	2.309	.275		8.386	<.001		
	Familiarity with Agile frameworks	.092	.065	.093	1.419	.157	.987	1.014
	Familiarity with change management practices	.008	.065	.008	.123	.902	.996	1.004
	Effectiveness of Agile in managing project changes	.026	.063	.027	.409	.683	.990	1.010

a. Dependent Variable: Impact on organization's performance from integration

Collinearity Diagnostics[a]

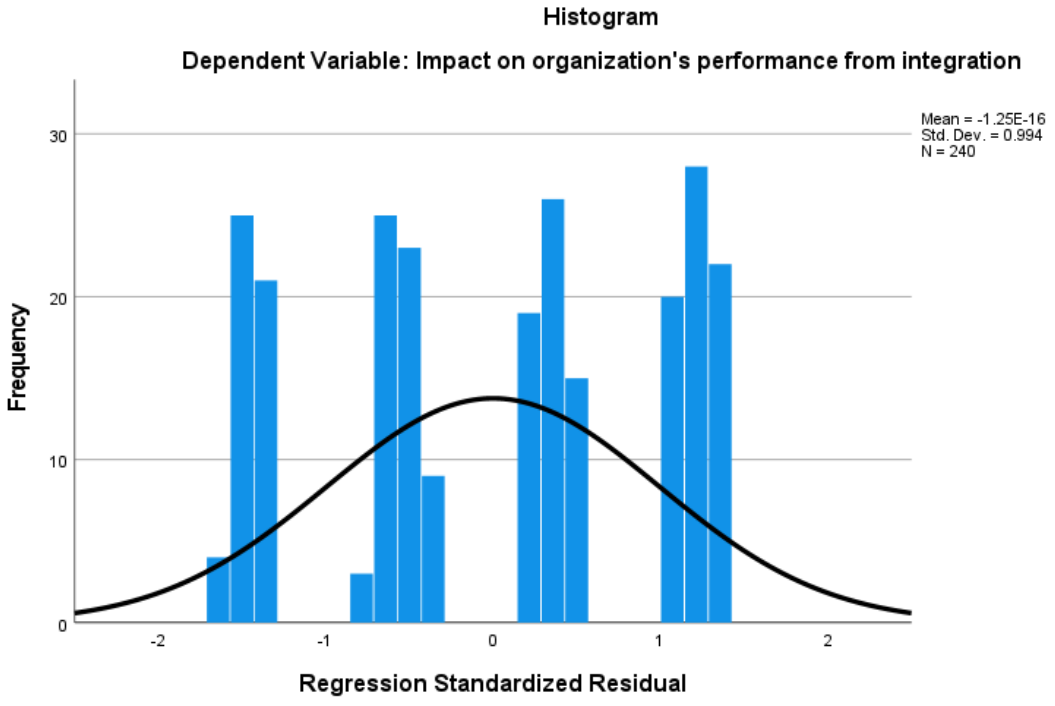
Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	Familiarity with Agile frameworks	Familiarity with change management practices	Effectiveness of Agile in managing project changes
1	1	3.641	1.000	.00	.01	.01	.01
	2	.159	4.789	.00	.02	.57	.42
	3	.149	4.936	.00	.74	.08	.29
	4	.050	8.500	.99	.23	.35	.28

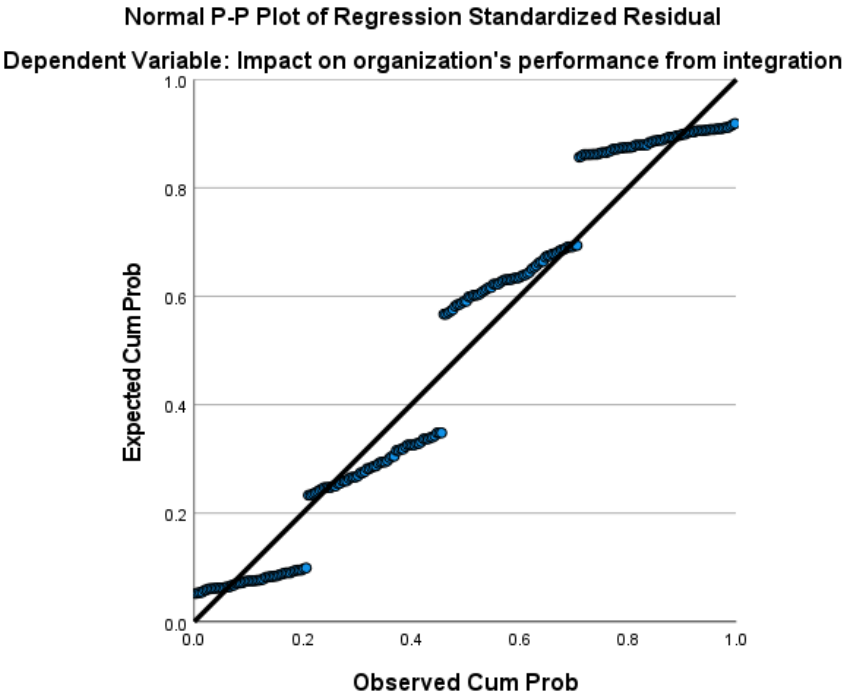
a. Dependent Variable: Impact on organization's performance from integration

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.43	2.81	2.62	.111	240
Residual	-1.812	1.557	.000	1.108	240
Std. Predicted Value	-1.713	1.681	.000	1.000	240
Std. Residual	-1.625	1.397	.000	.994	240

a. Dependent Variable: Impact on organization's performance from integration




Normal P-P Plot of Regression Standardized Residual
Dependent Variable: Impact on organization's performance from integration
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0