ADAPTIVE PROJECT MANAGEMENT PRACTICES, TEAM COLLABORATION AND PROJECT RESILIENCE A CASE OF UWEP PROJECTS, AMURIA DISTRICT

BY

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DECLARATION

I, **Angella Akurut** hereby declare that this is my original work and to the best of my knowledge has never been submitted for the award of a Masters in any other institution of higher learning unless other otherwise acknowledged.

Signature..... Date..22/10/2025.....

BU/GS21/MBA/04

APPROVAL

This is to certify that this Dissertation has been submitted with our approval as university supervisors.

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DEDICATION

I dedicate this dissertation to my beloved husband and children, whose unwavering love, patience, and encouragement have been my greatest motivation throughout this journey. I also dedicate it to all those who value and cherish education as a lifelong pursuit and a beacon of hope for personal and societal transformation.

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May God richly bless you all.

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LIST OF ACRONYMS

APMP – Adaptive Project Management Practices

DCDO – District Community Development Officer

FY – Financial Year

GEF – Global Environment Facility

PM – Project Management

PR – Project Resilience

SEPLS – Socio-Ecological Production Landscapes and Seascapes

SPSS – Statistical Package for the Social Sciences

TC – Team Collaboration

UN – United Nations

UWEP – Uganda Women Entrepreneurship Programme

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ABSTRACT

This study examined the mediating role of team collaboration in the relationship between adaptive project management practices and project resilience among Uganda Women Entrepreneurship Projects (UWEP) in Amuria district. Specifically, the study assessed the relationship between adaptive project management practices(APMP) and Project resilience, APMP and Team collaboration, Team collaboration and project resilience, and the mediating role of team collaboration in the APMP-Project resilience link. The study used a cross sectional research design and a quantitative approach. Using the guidelines of Kregcie and Morgan (1970), a sample of 122 projects was derived from a population of 179 UWEP projects. A structured questionnaire was used to collect data from the respondents and a response rate of 68.9% was realized at the level of unit of analysis. Data was analyzed using SPSS Version 22. The tool passed the test for validity and reliability. Following the guidelines of baron and Kenny(1986), the findings revealed that all the conditions required for mediation to occur were fulfilled confirming partial mediation. Based on the findings, the study concluded that team collaboration plays a vital mediating role, transforming adaptive project management efforts into enhanced project resilience, and therefore both elements must be intentionally cultivated for comprehensive project robustness. Therefore, the study recommended that UWEP project managers should integrate approaches that encourage adaptive management and at the same time develop team collaboration to achieve optimal project resilience through the creation of holistic capacity-building initiatives that instill adaptive planning skills and collaborative leadership abilities in project staff, the creation of project frameworks that require stakeholder participation and consultative decision-making, and the allocation of resources to help support both the flexible operation models and team integration efforts.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

The chapter comprises of the background of the study, problem statement, purpose of the study, research objectives, research hypotheses, scope of the study, significance of the study and conceptual framework.

1.1 Background of the study

In an increasingly volatile and uncertain environment, fostering project resilience is crucial for successful delivery amidst disruptions. Resilient projects withstand challenges and adapt dynamically, turning obstacles into opportunities for growth and innovation (Hillson, 2019; Aven, 2021). Project resilience refers to the capacity of a project to anticipate, absorb, adapt to, and recover from disruptions while maintaining its core objectives and integrity (Ahmed & Opoku, 2024; Rahi, 2019; Dublin & Natori, 2020; Proag, 2014). It involves proactive planning, effective risk management, and adaptability to ensure project continuity and success despite uncertainties and adverse conditions (Bhamra et al., 2011; Aven, 2021). Project resilience is characterized by awareness and adaptive capacity, which collectively enable sustained performance under challenging conditions (Rahi, 2019; Dublin & Natori, 2020; Bhamra et al., 2011; Hosseini et al., 2016).

However, project sustainability remained a global challenge over the years with many projects being hit hard by shocks. For instance, in Europe, the REPowerEU program encountered resilience challenges due to bureaucratic delays, regulatory hurdles, and supply chain disruptions, which hindered its ability to adapt effectively (European Commission, 2023). Project resilience challenges have also been reported in Japan, Bangladesh, United States and in Australia (Japanese National Police Agency, 2017; Asian Development Bank, 2022; Project Management Institute,

2021; Courier Mail, 2023). Additionally, projects on the African content have not been spared either with most projects failing as a result of shocks. For example, in 2023, countries in West and Central Africa faced severe flooding, which caused widespread damage to infrastructure and led to significant project failures. Nigeria, Niger, Chad, Lesotho, Malawi, Namibia, Zambia, Kenya and Zimbabwe also faced similar challenges, with millions of people displaced and extensive damage to infrastructure, severely hindering recovery efforts (Le Monde, 2024; AP News, 2023; Farmers Review Africa, 2023; Nation Africa, 2019).

In Uganda, poor project resilience has been evident in various sectors, particularly in construction and infrastructure projects. A study on Uganda's building construction sector revealed that inconsistent regulatory frameworks and lack of effective risk management practices contribute to project delays and cost overruns, undermining resilience (Kabagire et al., 2023). Similarly, road construction projects in Uganda are often delayed affecting their ability to adapt to unforeseen challenges (Makumbi et al., 2023). Relatedly, research indicated that 43% of UWEP beneficiaries reported a lack of innovation in products and services, leading to high competition and minimal profits, thereby undermining the resilience and sustainability of their businesses (Nile Post, 2023). Amuria District reported similar challenges, where many initiatives had struggled to withstand disruptions, raising concerns about their adaptability, recovery capacity, resourcefulness, and robustness over time (Ministry of Gender, Labour and Social Development, 2022; Amuria District Local Government, 2023).

Theoretically, the ability of complex systems, such as projects, to adapt to and recover from disruptions is determined by their management practices (Hollnagel, 2014). In the context of project management, the resilience engineering theory connects adaptive project management practices to project resilience by highlighting the need for flexibility, proactive risk management, and continuous learning. Adaptive project management practices, which involve real-time

adjustments and iterative planning, allow teams to respond effectively to emerging risks and changes (Aven, 2020). Team collaboration further strengthens project resilience by fostering shared knowledge, diverse problem-solving approaches, and enhanced communication, ensuring that the team can collectively navigate challenges (Paton & Johnston, 2017). Together, these elements align with the core tenets of Resilience Engineering Theory, which posits that resilience arises from a system's capacity to adapt and maintain performance despite disruptions (Hollnagel, 2014). Adaptive project management practices coupled with effective team collaboration, are essential for enhancing project resilience by facilitating proactive risk management and adaptive problem-solving which enable projects to recover from disruptions and maintain progress (Anderson et al., 2023; Zhang et al., 2023).

A growing body of knowledge had established the link between adaptive project management practices and project resilience. Most of the existing studies focus on the direct effects of adaptive practices on project resilience (Cohn & Cohn, 2020). The available studies did not explore how team collaboration facilitates the translation of adaptive management practices into improved project resilience. In addition, most of the existent literature on project resilience were conducted in developed countries and less attention had been paid to developing countries like Uganda. Thus, the need to establish the external face validity of project resilience theories within Uganda's unique socio-economic and infrastructural context. The country's ongoing developmental challenges, such as inadequate infrastructure, political instability, and limited resource allocation, significantly influence project performance and resilience (Katumba, 2021). The lack of context-specific research in Uganda means that the global insights on project resilience and team collaboration may not fully capture the local realities and constraints faced by Ugandan project teams. These gaps in literature created a need for focused studies that not only explore the mediating role of team

collaboration but also address how Uganda's specific context impacts project resilience, particularly in sectors like construction and infrastructure development (Kabagire et al., 2023).

1.2 Problem statement

Developing tailored frameworks that enable projects to adapt to disruptions and deliver sustainable outcomes is essential for achieving long-term economic growth. In Uganda, project resilience remains a significant challenge, particularly within sectors such as construction and infrastructure development (Ndugwa et al., 2023). Many projects continue to exhibit a troubling lack of resilience, marked by poor awareness and limited adaptive capacity. Despite ongoing efforts to enhance project resilience, these challenges persist, leading to the failure of numerous initiatives aimed at enhancing the country's development (Katumba, 2021).

Relatedly, research indicates that 43% of UWEP projects in Amuria district have struggled with inadequate adaptive strategies to respond to market and environmental changes, resulting in reduced capacity to sustain service delivery and support beneficiaries, thereby undermining overall project resilience and sustainability (Nile Post, 2023). This pervasive vulnerability is acutely highlighted by the 83.2% default rate on UWEP funds, largely stemming from a critical lack of awareness regarding program goals (Ministry of Gender, Labour and Social Development, 2024; The Cooperator News, 2024). Such widespread poor awareness and limited adaptive capacity directly frustrate sustainable livelihood transformation, keeping beneficiaries trapped in subsistence economies and eroding community confidence in development efforts within Amuria District.

1.3 Purpose of the study

The study aimed to establish the mediating role of team collaboration on the relationship between adaptive project management practices and project resilience among UWEP projects in Amuria district.

1.4 Study objectives

i. To examine the effect of adaptive project management practices on project resilience among UWEP projects in Amuria district.

ii. To determine the effect of adaptive project management practices on team collaboration among UWEP projects in Amuria district.

iii. To evaluate the effect of team collaboration on project resilience among UWEP projects in Amuria district.

iv. To examine the mediating role of team collaboration in the relationship between adaptive project management practices and project resilience among UWEP projects in Amuria district

1.5 Research hypotheses

H_1: Adaptive project management practices have a significant effect on project resilience.

H_2: Adaptive project management practices have a significant effect on team collaboration.

H_3: Team collaboration has a significant effect on project resilience.

H_4: Team Collaboration mediates the relationship between adaptive project management practices and project resilience

1.6 Scope of the study

1.6.1 Geographical scope

This study focused on UWEP (Uganda Women Empowerment Programme) projects in Amuria District, Uganda. Amuria District was selected for this study due to its active participation in numerous development projects like UWEP, among others yet, the district faces significant challenges, including widespread delays in project implementation, structural defects in completed projects and very low fund recovery rates of which reflect limited project resilience (Ministry of Gender, Labour and Social Development, 2024; The Cooperator News, 2024). By focusing on

UWEP projects in this district, the study provided valuable insights into how such projects adapt to disruptions and the factors that influence their resilience, offering recommendations that can be applied to similar rural settings in Uganda.

1.6.2 Subject scope

The subject scope of this study was limited to examining adaptive project management practices, team collaboration, and project resilience. The study explored how adaptive management strategies, such as flexibility in planning and continuous learning, contributed to enhancing project resilience in the face of disruptions. Additionally, it focused on the role of team collaboration in fostering a resilient project environment, particularly within the context of UWEP projects in Amuria District.

1.7 Significance of the study

To the government, this study could help government and other policymakers understand the barriers to successful project implementation and resilience which could aid future policy formulation.

To scholars, this study could contribute to the growing body of knowledge on project management in developing countries, particularly in the context of adaptive practices and team collaboration.

To UWEP project beneficiaries in Amuria District, the study offered practical insights into how adaptive management practices and team collaboration can improve project outcomes which could enable beneficiaries get better equipped to manage challenges and ensure the long-term sustainability of projects that directly affect their livelihoods.

1.8 Conceptual framework

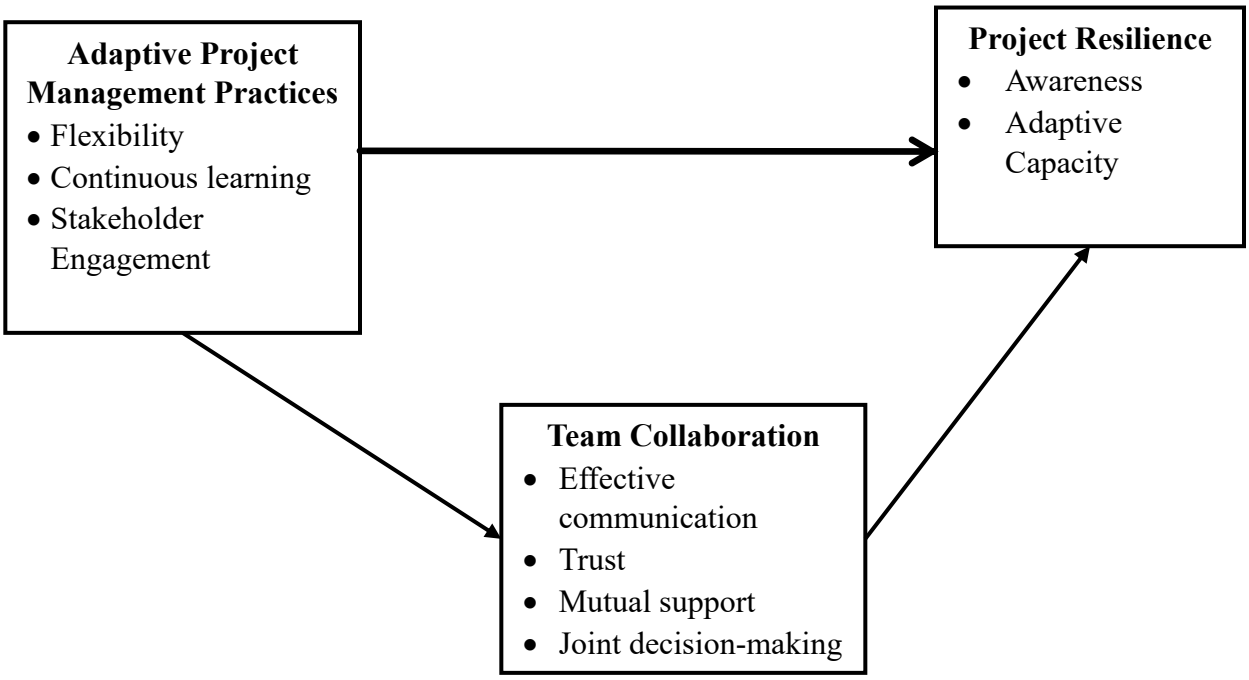

Figure 1: Conceptual framework

Source: *Kerzner, 2018; Sligo et al., 2022; Conforto et al., 2016; Opoku, 2024; Rahi, 2019; Dublin & Natori, 2020*

The conceptual framework (Figure 1) indicates the theoretical flow of the concepts of the study. This model indicates that adaptive project management practices can directly affect project resilience. In addition, the model indicates that team collaboration can also directly affect project resilience. Furthermore, the model indicates that adaptive project management practices can be mediated by team collaboration to influence project resilience.

CHAPTER TWO

LITERATURE REVIEW

1.0 Introduction

The chapter enlists the review of literature on adaptive project management practices, team collaboration and project resilience. First, the chapter reviews literature on the concepts, followed by the theoretical literature and then empirical literature. A summary of literature reviewed is also included in the chapter.

2.1 Conceptual review

2.1.1 Adaptive project management practices

Adaptive project management practices refer to a dynamic and flexible approach to managing projects that allows project teams to adjust their strategies, processes and objectives in response to changing conditions, unforeseen challenges and new opportunities (Roehrich et al., 2022). These practices incorporate key dimensions, including flexibility, continuous learning and stakeholder engagement, which collectively enable projects to navigate uncertainty and improve their chances of success (Roehrich et al., 2022). Flexibility in adaptive project management practices refers to the ability to adjust project plans, timelines and goals based on real-time feedback or changing circumstances, ensuring that the project remains aligned with both its strategic objectives and external factors (Aguirre et al., 2023). Projects that exhibit flexibility can easily pivot when faced with challenges or evolving requirements, thus maintaining progress even in dynamic environments.

Continuous learning is another crucial dimension of adaptive project management practices, emphasizing the importance of ongoing knowledge acquisition and the iterative improvement of processes throughout the project lifecycle (Williams & Kent, 2024). It involves the integration of lessons learned, feedback loops, and reflective practices that enable teams to optimize project

execution and avoid repeating past mistakes. Projects that prioritize continuous learning foster an environment of innovation and adaptability, which is essential for responding to unexpected challenges and seizing new opportunities as they arise. In this regard, teams are able to incorporate new insights and make informed decisions that enhance the project's overall effectiveness.

Stakeholder engagement, the third-dimension of adaptive project management practice, involves the active and ongoing participation of key stakeholders in the decision-making processes and project activities (Müller & Turner, 2023). This engagement ensures that stakeholders' needs, expectations and concerns are considered throughout the project, leading to improved communication, increased collaboration and a higher likelihood of project success. By continuously involving stakeholders, adaptive project management practices can better align the project with the needs of those impacted by its outcomes, while also ensuring that the project remains resilient to external pressures (Müller & Turner, 2023).

2.1.2 Team collaboration

Team collaboration refers to the process through which individuals work together towards a common goal, sharing knowledge, resources and responsibilities to achieve project objectives (Salas et al., 2022). In the context of project management, team collaboration is a multidimensional construct that encompasses four key dimensions of effective communication, trust, mutual support and joint decision-making. Effective communication involves the clear, transparent and timely exchange of information between team members, ensuring that all stakeholders are well-informed and aligned with project goals (Henderson et al., 2023). Effective communication minimizes misunderstandings and fosters an environment of shared understanding, which is crucial for project success.

Trust refers to the belief that team members are reliable, competent and committed to the project's success (Zhang & Huang, 2024). Trust facilitates open communication and the sharing of ideas, which can lead to more innovative solutions and a stronger sense of team cohesion. When trust is established within a team, members are more likely to collaborate openly, share responsibilities, and support each other in overcoming challenges. On the other hand, mutual support involves providing assistance and encouragement to team members, particularly during difficult tasks or high-pressure situations (Lee & Parsa, 2023). It fosters a cooperative team environment where individuals feel valued, leading to increased morale and enhanced collective performance.

While joint decision-making highlights the collaborative process of making important decisions as a group rather than leaving them to individual leaders or decision-makers (Klein et al., 2023). This collaborative decision-making process ensures that all perspectives are considered, promoting better decision quality and increased buy-in from all team members. When decisions are made jointly, team members are more likely to feel ownership over the project and be committed to its outcomes. Thus, effective communication, trust, mutual support and joint decision-making are synergistic in creating a cohesive and high-performing team that can effectively collaborate to achieve project goals.

2.1.3 Project resilience

Project resilience refers to the ability of a project to anticipate, absorb, adapt to and recover from adverse conditions, disruptions or shocks while maintaining its core functions and achieving its objectives. In project management literature, resilience is increasingly recognized as essential for sustaining project outcomes in volatile and uncertain environments (Hillson, 2022; Dinh et al., 2024). Although there is no universally agreed-upon set of indicators for measuring project resilience, emerging studies suggest that it can be meaningfully conceptualized through key

dimensions such of awareness and adaptive capacity (Martinsuo & Hoverfält, 2023; Ahmed & Opoku, 2024; Rahi, 2019; Dublin & Natori, 2020; Proag, 2014).

Awareness refers to a project's capacity to identify and understand internal and external risks, vulnerabilities and early warning signs. From a project's perspective, awareness is the project's ability to assess its environment and interpret the changes in its surroundings, now and in the future, to be proactive and better manage possible disruptive events (Lee et al., 2013; Stephenson, 2010). It encompasses environmental scanning, stakeholder sensing and risk intelligence enabling project teams to detect threats before they escalate (Duchek, 2020; Ahmed & Opoku, 2024). High awareness allows projects to develop proactive strategies and contingency plans, which reduces exposure to uncertainty and enhances readiness. Projects with strong awareness are not blindsided by disruptions but are instead positioned to respond with agility and informed judgment. Awareness thus strengthens resilience by fostering a risk-informed culture that can preempt or mitigate the effects of shocks.

Adaptive capacity is the ability of a project to adjust its processes, resources, or structures in response to changing circumstances without compromising long-term goals. This includes flexible decision-making, decentralized authority, learning mechanisms, and resource fluidity (Martinsuo & Hoverfält, 2023; Dinh et al., 2024). Adaptive capacity enables project teams to pivot during crises, recalibrate objectives, or reconfigure operations to fit emerging realities. By embedding adaptability into planning and execution, projects become resilient not because they avoid change, but because they are structurally equipped to evolve with it.

2.2 Theoretical review

This study was guided by the Resilience Engineering Theory (RET). RET was developed in the early 2000s by scholars such as Erik Hollnagel, David D. Woods, and Nancy Leveson, who recognized the need for a theoretical framework that could explain how complex systems maintain

their functionality under stress or following disturbances (Hollnagel, 2004; Woods & Hollnagel, 2006; Leveson, 2011). This theory arose as a response to the limitations of traditional risk management, which often focuses on avoiding failure rather than enabling systems to recover and adapt to unexpected challenges. RET emphasizes the capacity of systems to absorb shocks, adapt to changing conditions and recover from disruptions, rather than simply preventing failures. It represents a paradigm shift, where resilience is understood as an active, dynamic process of managing and responding to challenges, rather than a static state of risk avoidance (Hollnagel, 2014).

RET stresses the interdependencies within systems and advocates for an approach that encourages flexibility, collaboration, and learning as key enablers of resilience (Woods & Hollnagel, 2006). This theory was particularly relevant to the current study, as it provided a comprehensive framework for understanding the relationship between adaptive project management practices, team collaboration, and project resilience. In the context of adaptive project management, flexibility and continuous learning directly support the tenets of project resilience. By fostering a flexible approach, project teams can adapt to unforeseen changes, while continuous learning allows them to apply insights from past experiences to improve future project outcomes. Furthermore, adaptive project management practices enhance the ability to monitor and adjust strategies in response to emerging challenges, aligning with RET's emphasis on proactive and adaptive responses to stressors (Serrador & Pinto, 2020; McManus et al., 2008).

Team collaboration is also a key enabler of project resilience, as it promotes the collective decision-making and shared responsibility necessary for anticipating and responding to disruptions. Resilience Engineering emphasizes the importance of system interactions and teamwork, where the coordinated efforts of individuals and teams ensure that the system can continue to function effectively under stress. In the context of project management, team collaboration fosters an

environment where trust, mutual support and joint decision-making allow project teams to identify risks, make timely adjustments, and recover from setbacks (Salas et al., 2022; Zhang & Huang, 2024). The ability of teams to communicate openly, make decisions collaboratively and support each other in difficult times directly enhances the overall resilience of the project, aligning with RET's focus on adaptability and the interdependence of system components.

2.3 Empirical literature

2.3.1 Adaptive project management practices and project resilience

Empirical evidence broadly supported the view that adaptive project management practices enhance project resilience. For instance, McManus et al. (2021) found that flexibility, iterative planning, and continuous learning significantly strengthened the resilience of international disaster relief projects. Similarly, Frolova and Terekhov (2022), in their study on construction projects, emphasized that adaptive decision-making and stakeholder inclusion contributed to improved project recovery from delays and cost overruns. In Ghana, Oduro and Acheampong (2023) observed that infrastructure projects incorporating stakeholder feedback loops and continuous risk assessment were more resilient to environmental and socio-political disruptions. In East Africa, Kamau et al. (2022) documented how adaptive approaches like scenario planning helped agricultural projects in Kenya withstand shocks. These findings are echoed in Uganda, where Nalubega et al. (2024) and Bukenya et al. (2023) concluded that flexibility, participatory planning, and real-time learning enhanced resilience in rural development and water infrastructure projects, respectively.

However, despite these positive findings, literature reveals important limitations and mixed results. First, most of these studies are conducted in capital-intensive sectors like infrastructure, disaster relief and water systems where institutional and financial capacity often support complex adaptive

mechanisms. This raises concerns about generalizability to low-resource, community-based initiatives like the Uganda Women Entrepreneurship Programme (UWEP), which targets vulnerable populations with limited project funding and institutional support. Furthermore, while studies often emphasize adaptiveness as beneficial, several systematic reviews report that only 11–13% of adaptive management efforts achieve effective implementation due to institutional, political, or funding constraints (Williams & Brown, 2018). In some contexts, overly complex adaptive frameworks without adequate local capacity may actually worsen project execution.

2.3.2 Adaptive project management practices and team collaboration

Empirical studies increasingly affirm the positive relationship between adaptive project management practices and team collaboration. For instance, Zhang and Huo (2022) found that adaptive practices such as flexible task delegation, iterative feedback loops and continuous learning enhanced internal communication and team synergy within technology-sector project teams. Similar results were reported by Pettersson et al. (2023) in large-scale European construction projects, where adaptive strategies like scope revision based on stakeholder input and dynamic planning were linked to improved collaboration, reduced conflict and joint ownership of project tasks. These studies point to a common theme: adaptivity in management structures enables responsive coordination, which in turn fosters collaborative team environments.

However, while these findings are consistent in formal, resource-intensive sectors like technology and construction, contextual limitations exist, especially when considering informal or community-based project settings. For example, Okumu et al. (2022) examined adaptive project management in development projects across sub-Saharan Africa and found that although flexible decision-making and resource allocation promoted collaboration, success was highly contingent on pre-existing team dynamics and stakeholder alignment. In contexts where communication

systems were weak or hierarchy's rigid, adaptive practices alone did not guarantee collaborative cohesion. Similarly, Eze et al. (2024) reported positive effects of adaptive strategies on cross-departmental collaboration in Nigeria's public infrastructure sector, but noted that bureaucratic resistance and unclear mandates often diluted the effectiveness of these practices, raising questions about the universality of such outcomes.

Mutebi and Nalubega (2023), studying rural development projects, observed that iterative planning, participatory monitoring and stakeholder engagement improved collaboration among decentralized project teams. Yet even in this context, they acknowledged that adaptive practices were most effective when embedded in a culture of accountability and trust, conditions that are not always present in grassroots initiatives like UWEP. Furthermore, none of the reviewed studies specifically investigated team collaboration within women-targeted socio-economic projects in Uganda, leaving a notable empirical gap. While adaptive practices appear beneficial across sectors, there remained limited understanding of how they function in gender-sensitive, community-based projects, where team collaboration may be shaped by social norms, resource scarcity, or organizational fragmentation.

2.3.3 Team collaboration and project resilience

Empirical studies widely recognize the positive influence of team collaboration on project resilience across diverse contexts. For instance, Wijesundara and Arumugam (2023) demonstrated how collaborative efforts in Southeast Asian construction projects enhanced adaptability and problem-solving capacity during crises, directly contributing to resilience. Similarly, Bergman et al. (2024) found that open communication, trust and collective decision-making among teams in European renewable energy projects helped absorb shocks and maintain project continuity. Studies in Sub-Saharan Africa, such as Chikore et al. (2022), underscored the importance of collaboration

in agricultural projects, particularly in sharing local knowledge to mitigate climate risks. Furthermore, Kanyira and Mutisya (2023) highlighted how collaboration between local stakeholders and project teams in East African infrastructure projects built social capital essential for resilience. In Uganda, Kiggundu et al. (2023) found that trust and joint decision-making enabled teams to overcome challenges like funding shortages and political instability, promoting project success.

Despite these consistent findings, important gaps and contextual nuances remain underexplored. First, while research studies cover a broad geographic spectrum, there is limited empirical evidence on how collaboration functions within grassroots, women-focused initiatives such as the Uganda Women Entrepreneurship Programme (UWEP), where social dynamics and resource constraints differ markedly from large infrastructure or energy projects. Also, the literature seldom considers cases where collaboration alone may not suffice to ensure resilience, especially in contexts with weak institutional support or chronic resource shortages, suggesting that collaboration must be integrated with other factors (Morrison et al., 2022). These gaps indicated the need for studies that unpack the complex, sometimes contingent relationship between team collaboration and resilience, especially in resource-limited, socially complex environments like Amuria District's UWEP projects.

2.3.4 Adaptive project management practices, team collaboration and project resilience

Recent studies demonstrate a strong positive relationship between adaptive project management practices, team collaboration and project resilience across various sectors and geographical contexts. For example, Müller et al. (2024) showed that adaptive practices like continuous learning foster collaboration and enhance resilience in global infrastructure projects. Similarly, Larson and Halman (2023) found that in European renewable energy projects, iterative planning and

stakeholder involvement created conditions for effective teamwork and faster recovery from setbacks. Studies from Southern Africa (Ncube et al., 2023), East Africa (Kinyua & Mumo, 2023), and Uganda (Kiggundu et al., 2024; Nakasone & Makumbi, 2023) reinforce these findings, highlighting how flexibility, feedback loops, and collaborative cultures contribute to project resilience in sectors ranging from agriculture to health and infrastructure.

Despite this growing body of evidence, the literature presented several critical gaps and contextual limitations. First, while adaptive management and collaboration are often linked with resilience, few studies rigorously examine the mechanisms through which these factors interact, making it unclear how much each contributes independently versus synergistically. Second, most research focused on large-scale, well-funded projects in formal sectors, such as infrastructure, energy and health, which limits understanding of these dynamics in small-scale, community-driven or women-centered projects, such as the Uganda Women Entrepreneurship Programme (UWEP).

Moreover, there are mixed findings regarding the sufficiency of adaptive management and collaboration alone to foster resilience. Some studies (e.g., Morrison et al., 2022) suggest that without robust institutional support, transparent governance and adequate funding, adaptive practices and collaboration may have limited impact on resilience outcomes. This suggests a need for integrated frameworks that consider these factors in tandem. Overall, while the literature affirms the value of adaptive management and team collaboration for resilience, there remained a significant gap in empirical research exploring these relationships in the specific context of women-led, grassroots development projects in Uganda, particularly within UWEP projects in districts like Amuria.

CHAPTER THREE:

RESEARCH METHODOLOGY

3.1 Introduction

This chapter comprises of the research design, study population, sample size determination and sampling technique, data type and Source, data collection methods and instruments, measurement of variables, reliability and validity of research instrument, data analysis and presentation and ethical considerations.

3.2 Research design

Research design refers to the overall strategy that outlines how a research study will be conducted, providing a framework for the collection, measurement and analysis of data (Creswell, 2014). This study adopted a cross-sectional research design with a quantitative approach. A cross sectional research design involved collecting data at a single point in time to examine relationships between variables within a defined population (Creswell, 2014). The research design was adopted for this study because it allows for the examination of adaptive project management practices, team collaboration and project resilience within the context of ongoing projects in Uganda, providing a snapshot of the current state and relationships among these variables. The study also employed a quantitative approach. The use of a quantitative approach is appropriate as it emphasizes the measurement and analysis of numerical data, facilitating the use of statistical techniques to assess patterns, correlations, and relationships (Bryman, 2016).

3.3 Study Population

The study population refers to the total collection of individuals, objects, or events from which a sample is drawn (Mazhar, 2021). For this study, the population consisted of UWEP projects in Amuria district. According to data obtained from the Amuria District Community Development

Office (2024), there are a total of 179 UWEP projects in the district. It is from this population that a sample was drawn.

3.4 Sample size determination

Sample size determination refers to the process of choosing the number of respondents to include in a sample (Polit & Beck, 2006). Its primary aim is to ensure that the sample is adequately representative of the population from which it is drawn, thereby minimizing sampling error and enhancing the generalizability of the research findings (Fink, 2009). For this study, the sample size was determined based on the guidelines of Krejcie and Morgan (1970). Given a population of 179 UWEP projects in Amuria district, and consulting the Krejcie and Morgan (1970) sample size determination table at a 95% confidence level and a margin of error of 5%, a sample size for this study was 122 UWEP projects. This allowed for meaningful inferences to be drawn about the entire population of UWEP projects within the district.

3.5 Sampling technique and procedures

In this study, simple random sampling was the sampling method used. Simple random sampling is a type of probability sampling in which all the population elements are given equal and independent opportunities to be included in the sample (Gravetter and Forzano, 2018). This method was selected because it allows generating a highly representative sample and, thus, minimizes the selection bias and improves the external validity of study results. Its selection was based on the motivation to provide an equal chance to all UWEP projects within the Amuria district to be part of the study, hence providing results that would be generalized to the whole population, which is UWEP projects.

Sample selection procedure included a list of all 179 UWEP projects in the Amuria District Community Development Office. The name of each project was then written separately on a piece

of paper. All of these bits of paper were folded in a single way, put into a non-transparent box, and mixed thoroughly. A nonbiased person would then select the pieces of paper one at a time without substitution until the target sample of 122 projects had been reached. The systematicity of this approach made the selection process totally random and without researcher bias.

3.6 Data collection methods and instrument

The quantitative data for this study was collected using the questionnaire, a method chosen for its efficiency in gathering structured and quantifiable data from a large sample. The questionnaire method is particularly effective for studies with geographically dispersed participants, such as those involved in UWEP projects across Amuria District, as it allows respondents to complete the survey at their convenience, reducing potential biases due to interviewer presence (Creswell, 2014). A self-administered questionnaire that was anchored on a five-point Likert scale was used for this purpose. The questionnaire is ideal for measuring attitudes, perceptions and opinions on project management practices, team collaboration and resilience as well as providing a standardized way to quantify responses (Saunders et al., 2019). This method ensures that the data collected is consistent, reliable, and suitable for statistical analysis, making it a suitable choice for testing hypotheses and drawing conclusions about the relationships between the study variables.

3.7 Measurement of Variables

The study measured adaptive project management practices in terms of flexibility, stakeholder engagement, and continuous learning as guided by Fernandez and Rainey (2017). Accordingly, the study used 23 questionnaire items to adopted and modified from Fernandez and Rainey (2017) with statements such as; “the team is open to adapting the project strategy based on changing circumstances”, “there is a culture of learning and experimentation.” Additionally, team collaboration was measured as effective communication, mutual support, trust, and joint decision

making as guided by Salas et al (2015). To measure team collaboration, the study used 24 items with sample items such as; “Team members communicate openly and transparently with each other”. Furthermore, project resilience was assessed through awareness and adaptive capacity according to Rahi (2019). Also, 24 items were used to measure project resilience with items such as; “our project team actively monitors risks throughout the project life cycle”. All these variables were measured on a 5 point likert scale ranging from strongly disagree to strongly agree.

3.8 Reliability and Validity

3.8.1 Reliability

Reliability is the extent to which a measurement instrument or procedure gives identical results when applied again and again using identical conditions (Portney and Watkins, 2009). A good tool is one that measures what it is supposed to measure. In order to determine the reliability of the research instrument, a pilot study was carried out in Kumi district. The pilot study was conducted in Kumi district because of its demographic and socio-economic comparisons with Amuria district, specifically on how UWEP projects were executed and set up, so that the pilot study setting was more or less similar to the circumstances of the actual study. There were 25 respondents in this pilot study. The information obtained in the pilot study was then submitted to a reliability test based on Cronbachs Alpha coefficient, which is a commonly recognized internal consistency measure (Pallant, 2020). All variables were above the generally accepted cut off point of 0.7 as it is suggested by Nunnally (1978) that a Cronbachs Alpha of 0.7 or above signifies acceptable internal consistency. This assured the consistency and stability of the research instrument to the main study.

3.8.2 Validity

Validity is the degree to which a measurement instrument is comprehensive enough to capture all the aspects of the construct that the measurement is supposed to measure (Rubio et al., 2001). To

ensure validity, the research tool was checked by two independent practitioners, who had long experience in community development and the implementation of UWEP projects. These professionals were asked to determine whether the instrument items were able to cover the important constructs being studied in a comprehensive and proper way. Their response was helped to refine the questionnaire making it concise, direct and to the point. The Content Validity Index (CVI) was determined using the expert judgments and all the variables were found to be valid since they fell under the index of 0.8 as recommended by Lynn (1986) who says that a CVI score of 0.8 and above indicates a high level of content validity.

3.9 Data Analysis techniques

After gathering of data from the sampled UWEP projects, it was taken thorough cleaning, sorting, and coding procedures in order to ascertain the accuracy and analysis readiness. All the data were then coded accordingly and then input into the Statistical Package for the Social Sciences (SPSS) version 27 to conduct a thorough statistical analysis. Descriptive statistics were used to ascertain the key features of the study variables. The categorical demographic data and the characteristics of the project were described using frequencies and percentages. Also, the means and standard deviation were calculated to give the understanding of the central tendency and the dispersion of the data.

Correlational analysis was used to test the strength and direction of the relationship between the study variables. In particular, the strength and direction of linear relationships between Adaptive Project Management Practices (APMP), Team Collaboration (TC), and Project Resilience (PR) were determined with the help of Pearson product-moment correlation coefficient. This analysis was essential in determining initial relationships, which is a prerequisite to further analyses at the multivariate level. Regression analysis was then used to test the predictive power of the

independent variables on the dependent variable. The multiple linear regression was carried out to be able to understand how Adaptive Project Management Practices (APMP) predicts of Project Resilience (PR), APMP predicts of Team Collaboration (TC), and TC predicts of PR.

Lastly, to directly examine the mediating role of team collaboration in the relationship between adaptive project management practices and project resilience, a mediation analysis was done. The SPSS PROCESS Macro created by Hayes (2022) was used. Model 4 of the PROCESS macro was applied to test the direct influence on the Project Resilience (Y) by the indirect influence of Adaptive Project Management Practices (X) mediated by Team Collaboration (M) following the fundamental premises of Baron and Kenny (1986) and further extended in explaining the role of the concept of Team Collaboration as an intermediary.

3.10 Ethical considerations

In this study, ethical standards were followed and the integrity in the research process was ensured. The researcher obtained an official introductory letter of the Faculty of Management Sciences before the actual fieldwork started. This letter was an official identification and a sign of adherence to formal ethical guidance. The ethical framework also had regard to voluntary participation which was got through an informed consent process. All participants were carefully informed on the intention of the research, the process that was to be undertaken, the expected duration that would be needed to participate in the research, and all benefits or any other likely harm that would accrue to the participants as a result of their participation. Moreover, the subjects were clearly told of the planned-data-use purposes and were certainly guaranteed of their unconditional right to refuse to participate or to drop out of the study at any point, without suffering any penalty or disadvantage.

The ethical requirement of confidentiality was carefully upheld in a multi-layered approach. When data was collected, a distinct numeric code was given to each questionnaire avoiding the use of

identifiable information. Also, the respondents were not asked to provide any direct personal information, including names, phone numbers, or other specific titles, so their identities remained unknown/anonymous in the questionnaires, which further guaranteed the adherence to the principle of anonymity when possible and strengthened the overall respect to participant privacy.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION OF FINDINGS

1.0 Introduction

This chapter consists of data analysis, presentation, interpretation of findings. Specifically, this chapter presents the response rate, demographic characteristics, descriptive statistics, correlation analysis, regression analysis, and mediation analysis.

4.1 Response rate

According to Baruch and Holtom (2008), response rate refers to the number of individuals who completed and returned the survey divided by the number of individuals in the sample who were eligible to complete the survey. In this study, a total of 366 questionnaires were distributed to individual respondents within the 122 sampled UWEP projects. Of these, 239 questionnaires were duly filled and returned, indicating the response rate 65.3% at the level of unit of inquiry. Concurrently, out of the 122 UWEP projects initially sampled, 84 projects actively participated in the study by having their members complete and return questionnaires. This represents the response rate of 68.9% at the level of unit of analysis. The achieved response rates of 65.3% at the unit of inquiry level and 68.9% at unit of analysis level are considered acceptable for survey-based research, aligning with typical academic expectations (Fowler, 2013).

Table 4.1: Response rate

Level of Analysis	Distributed	Received/Participated	Response Rate (%)
Unit of Analysis (Respondents)	366	239	65.3%
Unit of Inquiry (Projects)	122	84	68.9%

Source: Primary data, 2025

4.2 Demographic characteristics

The demographic characteristics of the respondents in table 4.2 revealed that the highest percentage of respondents was between the ages of 30-39 (51.0%), then 40-49 (25.5%), andunder 30 years (23.4%). This implies that there is a large population of mature and active adults participating in the UWEP projects. In terms of project resilience, such age distribution may suggest that there is a workforce that has a certain degree of life and work experience, which may positively impact their level of awareness of probable challenges and their adaptability in addressing project-related problems.

In terms of education, the largest percentage of the respondents indicated they had a Certificate (59.9%), with smaller percentages having Diplomas (18.0%), Undergraduate degrees (13.8%) and Postgraduate qualifications (8.4%). The dominance of certificate level education could potentially affect the way information about project resilience is processed and communicated, which can affect both awareness and the adaptive capacity.

The characteristics of the unit of analysis indicated that majority of the projects were 3-5 years old (38.1%), then 1-2 years old (33.3%), and those with tenure under 1 year and over 6 years of tenure were the same (14.3% each). Long term projects may have a higher adaptive capacity because of experience gained in negotiating and overcoming operational difficulties and established patterns of operating amid disruptions. On the other hand, newer projects may be more agile yet riskier because of the absence of the already developed protocols to create awareness about the emergent risks.

By sector, the findings indicated that majority of the projects are in trade and commerce (44.0%), production (36.9%), and agriculture (19.0%). The prevailing nature of Trade and Commerce which tends to be characterized by dynamism in the market and complexities in supply chains may

require a higher level of sensitivity of market dynamics and swift adaptive capacity to meet the changing consumer needs or logistical challenges. On the other hand, Production projects may have varying resilience requirements, such as equipment failures or supply of raw materials, whereas Agriculture projects may have to deal with environmental volatility, and must have strong adaptive capacity to the weather conditions and pests. These sectoral variations bring about diverse environmental pressures that drive the formation and manifestation of project resilience.

Table 4.2: demographic Characteristics

	Sub-Category	Frequency	Percent
Age (Years)	< 30	56	23.4
	30-39	122	51.0
	40-49	61	25.5
	Subtotal	**239**	**100.0**
Education Level	Certificate	143	59.9
	Diploma	43	18.0
	Undergraduate	33	13.8
	Postgraduate	20	8.4
	Subtotal	**239**	**100.0**
Tenure	Less than 1 Year	12	14.3
	1-2 Years	28	33.3
	3-5 Years	32	38.1
	6+ Years	12	14.3
	Subtotal	**84**	**100.0**
Sector	Production	31	36.9
	Trade and Commerce	37	44.0
	Agriculture	16	19.0
	Subtotal	**84**	**100.0**

Source: Primary data, 2025

4.3 Descriptive statistics

Table 4.3 indicates that the average score of Adaptive Project Management Practices was 3.97 (SD = 0.34), which means that most respondents perceived agreed with the items used to measure adaptive project management practices. The relative standard deviation is also low, suggesting that

these perceptions were rather consistent across the sampled projects and there was not much variation.

The team Collaboration had also a high mean score of 3.92 (SD = 0.31). This is an indication that there was a general agreement that team collaboration was successfully exercised within their projects. The standard deviation is small, meaning that there is extensive agreement in the projects on the common occurrence of collaboration efforts.

Likewise, the mean of Project Resilience was 3.88 (SD = 0.35). This means that the UWEP projects were viewed to have a relatively high degree of resilience in terms of awareness as well as adaptive capacity. The standard deviation was also low indicating low levels of deviation in responses.

4.4 Correlation analysis

To establish the strength and direction of the relationships between the study variables, a correlation analysis was conducted using Pearson's product-moment correlation coefficient. The results are indicated in Table 4.3 below.

Firstly, regarding the relationship between adaptive project management and team collaboration, Adaptive Project Management Practices (APMP) demonstrated a positive and statistically significant relationship with team collaboration ($r = .367$, $p < 0.01$). This indicates that as the level of adaptive project management practices increases, there is a corresponding tendency for team collaboration to also increase within projects.

Secondly, concerning the link between adaptive project management and project resilience, Adaptive Project Management Practices also showed a strong positive and statistically significant correlation with project resilience ($r = .655$, $p < 0.01$). This strong positive correlation suggests

that projects employing more adaptive management practices tend to experience significantly improved levels of project resilience.

Lastly, in assessing the relationship between team collaboration and project resilience, team collaboration was found to have a strong positive and statistically significant correlation with project resilience ($r = .672$, $p < 0.01$). This robust positive association indicates that an improvement in team collaboration is strongly linked to an improvement in project resilience among UWEP projects.

Table 4.3: Correlation Analysis

Variable	1	2	3
1. Adaptive Project Management practices	*		
2. Team Collaboration	.367**	*	
3. Project Resilience	.655**	.672**	*
Correlation is significant at the 0.01 level (2-tailed).			

Source: Primary Data, 2025

4.5 Regression analysis

Regression analysis was carried out to assess the predictive power of the independent variables on the dependent variable. The results are indicated in the tables below;

4.5.1 Adaptive project Management practices and Project resilience

A regression analysis was carried out to assess the predictive power of adaptive project management on project resilience. The findings in Table 4.4 indicate that adaptive project management has a positive and significant influence on project resilience ($F= 60.500$, $p < 0.01$). This significant F-statistic confirms that the overall regression model is statistically significant, demonstrating that adaptive project management explains a meaningful portion of the variance in project resilience. Specifically, the adjusted R-squared value (Adj $R2 = .422$) implies that 42.2%

of the variance in project resilience is as a result of adaptive project management, while the remaining 57.8% is attributable to factors not included in this model. These findings strongly support hypothesis one.

Table 4.4: Adaptive Project management and Project resilience

Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error	Beta		
(Constant)	1.264	.335		3.769	.000
Adaptive project management	.661	.084	.655	7.842	.000
Model Summary					
R = .655[a]		R^2 = .429	Adj. R^2 = .422	F = 61.500	

a. Dependent Variable: Project resilience

Source: Primary Data, 2025

4.5.2 Adaptive project management practice and team collaboration

A regression analysis was also conducted to assess the explanatory power of adaptive project management on team collaboration. The findings in Table 4.5 show that adaptive project management has significant explanatory power on team collaboration ($F = 12.789$, $p < 0.01$). This statistically significant F-statistic indicates that the overall regression model is significant, meaning adaptive project management accounts for a significant portion of the variance in team collaboration. Specifically, the adjusted R-squared value (Adj. R2 = .124, $p<0.01$) implies that 12.4% of the variance in team collaboration is explained by adaptive project management, while the remaining 87.6% is as a result of other factors not included in this model. These findings offer strong support to hypothesis 2.

Table 4.5: Adaptive project management and team collaboration

Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error	Beta		
(Constant)	2.598	.371		6.999	.000
Adaptive project management	.334	.093	.367	3.576	.000
Model Summary					
R = .367[a]		R^2 = .135	Adj. R^2 = .124	F = 12.789	

a. Dependent Variable: Team Collaboration

Source: Primary data, 2025

4.5.3 Team collaboration and project resilience

The researcher also carried out a regression analysis to assess the predictive power of team collaboration on project resilience. The results posit that team collaboration significantly predicts project resilience (F= 67.352, $p < 0.01$). This significant F-statistic indicates that the overall regression model is statistically significant, meaning that team collaboration, as a predictor, explains a significant amount of variance in project resilience compared to a model with no predictors. Specifically, the adjusted R-squared value (Adj. R2 = .444, $p<0.01$) implies that 44.4% of the variance in project resilience is explained by team collaboration, while the remaining 55.6% is accounted for by other factors not included in this model. These results further offer strong support for hypothesis 3.

Table 4.6: Team collaboration and Project Resilience

Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error	Beta		
(Constant)	.957	.338		2.676	.000
Team collaboration	.746	.091	.672	8.207	.000
Model Summary					
R = .672[a]		R^2 = .451	Adj. R^2 = .444	F = 67.352	

a. Dependent Variable: Project resilience

Source: Primary Data, 2025

4.6 Mediation analysis

In order to examine the mediating role of team collaboration in the relationship between adaptive project management and project resilience, a mediation analysis using PROCESS Model 4. Based on the guidelines of Baron and Kenny (1986), path a was significant where Adaptive project management positively predicted team communication ($\beta = 0.3335$, $p < .01$). additionally, path b (relationship between team collaboration and project resilience) was also significant ($\beta=0.5539$, $p<0.01$) implying that team collaboration is a significant predictor of project resilience. Path c which represents the total effect of adaptive project management on project resilience was significant ($\beta=6607$, $p<0.01$). However, when team collaboration was included into the model (Path c'), the impact of adaptive project management on project resilience reduced from $\beta=0.6607$ to $\beta=0.4760$ but remained significant. This implies that team collaboration partially mediated the relationship between adaptive project management and project resilience.

Additionally, the ratio index in this mediation model was 0.279 implying that 27.9% of the influence of adaptive project management is through team collaboration while the remaining 82.1% is as a result of the direct effect. These findings support the hypothesis that team

collaboration is a significant mediator in the relationship between adaptive project management and project resilience (H4).

Table 4.7: Mediation Analysis

Path / Effect	Beta (Effect)	Sig. (p)	95% CI (LLCI, ULCI)
Path a (X → M) Aadaptive project management → team collaboration	0.3335	0.0006	(0.1480, 0.5190)
Path b (M → Y) Team collaboration → project resilience	0.5539	0.0000	(0.3961, 0.7117)
Path c Total effect Adaptive project Management →Project resilience	0.6607	-	
Path c' (Direct effect X → Y controlling M) Adaptive project Management →Project resilience controlling for team collaboration	0.4760	0.0000	(0.3327, 0.6193)
Indirect (Path a * Path b)	0.1847	-	BootLLCI = 0.0617, BootULCI = 0.3079
Ratio index (Indirect / Total)	0.2796	-	-

Source: Primary Data, 2025

4.7 Summary of hypothesis

The table below shows a summary of hypothesis tested through the regression and mediation analysis.

Table 4.8:Summary of hypothesis

Hypothesis	Description	Comment
H_1	Adaptive project management practices have a significant effect on project resilience.	Accepted
H_2	Adaptive project management has a significant effect on team collaboration	Accepted
H_3	Team collaboration has a significant effect on project resilience	Accepted
H_4	Team Collaboration mediate the relationship between adaptive project management and project resilience	Accepted

Source: Primary Data, 2025

CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS, AND RECCOMENDATIONS

1.0 Introductions

This chapter present the discussion, conclusions, recommendations, limitations, and areas for further research.

5.1 Discussions

5.1.1 Adaptive project management practices and project resilience

The aim of this study was to was to investigate how adaptive project management practices influence the projects resilience of UWEP projects in Amuria district. The results indicate that adaptive project management practices have a positive and significant effect on project resilience. This implies that the adaptive project management practices such as flexibility, continuous learning, and stakeholder engagement are a good predictor of project resilience (Awareness and adaptive capacity). This strong statistical result prompts the acceptance of Hypothesis H1 which stated that adaptive project management practices are impacted on project resilience. These results resonate with McManus et al. (2021) who found that flexibility and iterative planning, as well as consistent learning, were essential to improving the resilience of international disaster relief projects. Also, the findings of this study align with the observations of Oduro and Acheampong (2023) in Ghana where projects with feedback loops and continuous risk assessment demonstrated better resilience to environmental and socio-political challenges.

The results seem to suggest that project teams are able to respond to any uncertain event by making fast changes to their plans when they exhibit flexibility in decision-making to respond to new opportunities and threats. This encompasses situations where the project management strategy easily accommodates the need to change the scope and direction of projects as and when required,

and where project teams frequently review and update plans to suit unexpected changes. Additionally, continuous learning is an important commitment that also goes a long way in resilience. When teams are engaged in seeking feedback to enhance performance and applying lessons learned in the past experiences to the present project, they create the climate where insights contribute to better performance outcomes of the project in the future. The ongoing consultation of stakeholders also stands out as a key adaptive practice. The findings indicate that when projects actively engage stakeholders in the major decision-making process and listen to their input, such projects are in better place to make the required changes to the project plans and manage expectations during the project lifecycle which improves on resilience.

Theoretically, these findings robustly support the tenets of Resilience Engineering Theory (RET). RET posits that resilience is an active, dynamic process characterized by the capacity to absorb shocks, adapt, and recover. The results directly align with RET's emphasis on flexibility and continuous learning as key enablers of resilience. The significant relationship between adaptive project management and project resilience underscores RET's assertion that proactive and adaptive responses to stressors are fundamental for system functionality under stress (Hollnagel, 2014). This study extends the applicability of RET to community-based livelihood project contexts such as UWEP, demonstrating how the principles of flexible planning, continuous feedback, and proactive stakeholder engagement translate into tangible resilience outcomes for projects serving vulnerable populations.

5.1.2 Proactive project management practices and team collaboration

The study also sought to assess the relationship between assess the relationship between adaptive project management practices and tam collaborations. According to the findings, adaptive project management practices such as flexibility, continuous learning, and stakeholder engagement predict team collaboration. These results are consistent with the emerging empirical evidence that

confirms the positive relationship between adaptive management practices in project team collaboration such as Zhang and Huo (2022) who found that adaptive practices, including task-flexibility, feedback-loops, and learning-as-you-go, proved successful in terms of improving the internal communication and building team synergy in technology-related projects. In a similar fashion, Pettersson et al. (2023) also found that adaptive strategies, such as dynamic planning and scope revision relying on stakeholder feedback, were linked to enhanced collaboration and shared ownership of activities in large-scale European construction projects.

The identified relationship can be further explained by the fact that the particular behaviors and strategies that characterize adaptive project management are observed in UWEP projects. As an example, the adaptability of the project management practices which enable the required adjustments in the project scope and direction directly enables collaborative atmosphere in which team members can collectively overcome the changing obstacles. Likewise, the willingness of a team to adapt its strategy to the evolving conditions, or the ease with which it can adapt to the changes in the priorities of the project, reduces friction and promotes collective problem-solving instead of sticking to the old plans. This flexibility promotes responsive collaboration. Also, the focus on lifelong learning among the project team members, where the experience of past projects is incorporated and team members are motivated to develop new skills, creates a common knowledge base and a sense of collective responsibility to improve, which are the cornerstones of strong collaboration. By actively sharing knowledge and seeking feedback to enhance performance, team members will be more interdependent and sensitive to the contributions of others.

Theoretically, these results are consistent with the fundamental principles of Resilience Engineering Theory (RET) which focus on systems interactions and learning as the means of

strong system performance during stress. The findings of the study illustrate the role of adaptive project management with its inherent emphasis on flexibility and ongoing learning in supporting the dynamic and interconnected teamwork that is critical to team collaborative results. the findings also further extend the applicability of theory to livelihood projects like UWEP.

5.1.3 Team collaboration and Project resilience

This study examined the relationship between team collaboration and project resilience among Uganda Women Entrepreneurship Programme (UWEP) projects in the Amuria District. The results serve to show that team collaboration has a significant effect on project resilience. This implies that an improvement communication, trust, mutual support, and joint decision-making leads to better project resilience (awareness and adaptive capacity). These findings are consistent with Wijesundara and Arumugam (2023) who found that team collaboration among construction projects in south east Asia predicted project resilience. Also, the findings align well with those of Bergman et al. (2024) who found that open communication, trust, and collective decision making helped absorb absorb shocks and enhance project continuity in the energy sector in Europe.

The findings also seem to suggest that when information is delivered clearly and effectively within team and frequent meetings to discuss progress and solve the issues are held, the projects are more likely to achieve the improvement of awareness of possible barriers and build proactive solutions. Additionally, the findings allude that mutual respect and trust among the team members, the establishment of collective decision-making patterns, and the active participation of these members in the process of making these decisions allow the project to be more flexible to new developments and overcome obstacles. This is lays a good foundation for projects become resilient. Furthermore, the findings claim that creating an atmosphere in which the team members feel free to share ideas, offer constructive feedback and support each other during hardship is a

critical way of increasing the shock absorbing capacity of the project, as well as keeping the project on track for longer.

The results of this study provide support for the Resilience Engineering Theory (RET). RET focuses on the ability of systems to take up shocks and adapt to new contexts and come back to normal after disruption, which sees resilience as a dynamic process and not a fixed state. The results of this study on team collaboration are in line with the flexibility, collaboration, and learning as the enablers of resilience in RET (Woods and Hollnagel, 2006). The identified positive correlation of team collaboration and project resilience can show how the organized work, joint decision-making, and mutual support of team members enable the projects to work properly even in the state of stress. This therefore extends the application RET to contexts such as livelihood projects.

5.1.4 The mediation role of team collaboration in the relationship between adaptive project management practices and project resilience

This study also examined the mediating role of team collaboration in the relationship between adaptive project management practices and project resilience among UWEP projects in Amuria District. These empirical results indicate that team collaboration partially mediates the relationship between adaptive project management practices and project resilience. This finding resonates with Muller et al. (2024) who found adaptive practice as an example, in the form of the development of continuous learning, which inherently leads to collaboration and enhances resilience in large-scale global infrastructure projects. Similarly, Larson and Halman (2023) reported that the presence of iterative planning methodologies and solid stakeholder engagement in European renewable energy initiatives created the environment of effective teamwork and therefore, quick recovery in unforeseen issues. Also, the findings of this study fill a critical gap in literature. Much as the mediating role of team collaboration has been explored in other studies (Larson & Halman, 2023),

the extent to which it influences the relationship between adaptive project management practices and project resilience was not known until this study.

The findings seem to allude that the systematic inclusion of adaptive practices in projects, including the ability to exhibit adaptability in terms of scope change, and the regular updating of plans under the influence of new information, leads to a significant improvement in collaboration within the team. This implies that the project atmosphere of pre-existing flexibility and the proactive desire to adapt to changing conditions naturally fosters the environment of enhanced communication, mutual understanding and collective problem-solving within the team. Moreover, the results suggest that, when project teams are characterized by an evident openness to strategically adjust their strategy under dynamic circumstances and are agile enough to shift their resources in response to challenges in a timely fashion, a more unified and responsive collaborative effort is created. This enhanced cooperation, in its turn, has a very strong impact on the general project resilience.

Furthermore, the results show that, when the existing project management strategy implicitly allows a change in the project scope and direction as predetermined by changing situations, and the team is proved to be open to changing its strategic orientation, a strong environment of successful co-operation is created. This inherent adaptability in combination with an adherence to a culture of lifelong learning, as each new experience is mined and turned into an integrated part of the team and its members are actively motivated to learn new skills, makes direct contributions to the effectiveness of the team as a team of synergists. The evidence clearly indicates that where crucial information is shared effectively and clearly across the team, and where standardized forums are developed to discuss the progress of the project and address the emergent problems, the core foundation of the project resilience is significantly enhanced.

These results are consistently explained by Resilience Engineering Theory (RET). RET conceives project resilience as an active, emergent capacity of complex systems to absorb shocks, adapt to changing conditions, and recover from perturbations (Hollnagel, 2004; Woods & Hollnagel, 2006). This study empirically supports RET's core propositions. Adaptive project management manifested as flexibility in timelines and resource allocation, iterative planning, and continuous learning directly strengthens resilience and does so indirectly by improving team collaboration. The mediating role of collaboration aligns with RET's emphasis on system interactions such as coordinated and collective action transforms adaptive practices into sustained functional performance under stress.

5.2 Conclusions

The researcher made the following conclusions based on the findings and in line with the study objectives

The study sought to determine how adaptive project management practices directly influence project resilience. The findings demonstrated a significant positive relationship exists between adaptive project management practices and project resilience. This means that a project management approach which allows for changes in scope and direction, an openness to adapting strategies based on changing circumstances, and the ability to adjust timelines and reallocate resources swiftly, are crucial for projects to successfully navigate unforeseen challenges. The researcher therefore concludes that implementing and nurturing adaptive project management practices directly fortifies a project's ability to maintain functionality stressing conditions.

Additionally, this objective aimed to investigate the direct association between team collaboration and project resilience. The study's findings indicate a strong positive relationship between team collaboration and project resilience. This implies that clear and effective internal communication,

regular meetings for progress discussion and issue resolution, mutual respect, and collective decision-making within teams significantly contribute to a project's capacity to absorb shocks and maintain continuity. The researcher concludes that enhancing team collaboration is a critical strategy for boosting project resilience, particularly in contexts mirroring the UWEP initiatives.

This study also set out to assess the influence of adaptive project management practices on team collaboration. The study's results indicate a significant positive relationship exists between adaptive project management practices and team collaboration. This shows that when project management approaches emphasize flexibility, allow for continuous learning, and encourage iterative planning and feedback loops, team members engage more effectively. The researcher concludes that adaptive project management practices serve as a foundational element for cultivating high levels of team collaboration in projects.

Finally, the study aimed to explore whether team collaboration acts as a mediator in the link between adaptive project management practices and project resilience. The findings revealed a significant indirect effect, confirming that adaptive project management enhances project resilience partly by first strengthening team collaboration. This indicates that while adaptive practices directly contribute to resilience, their full impact is realized when they also foster a more collaborative team environment. The researcher concludes that team collaboration plays a vital mediating role, transforming adaptive project management efforts into enhanced project resilience, and therefore both elements must be intentionally cultivated for comprehensive project robustness.

5.3 Recommendations

Since the study established that adaptive project management practices enhance the resilience of projects, the study recommends that UWEP project managers should incorporate and emphasize

adaptive methodologies systematically in the project planning and execution processes. This can be having continuous checking and feedback mechanisms to enable modification of project scope, timelines and resources allocated to it, by having a culture of learning the failures and success of the project and proactively engaging the beneficiaries and local communities in decision making processes to be flexible and responsive to the changes in their needs. By so doing, UWEP projects will achieve greater resilience as they will have the innate agility to take initiative to address emerging challenges and take advantage of unseen opportunities, thereby maintaining their developmental influence in changing environments.

Additionally, the study found a positive correlation between team collaboration and project resilience. the study suggests that UWEP projects should invest in strategies that foster and maintain high levels of team collaboration. This can achieved through implementation of effective communication guidelines, frequent and interactive team gatherings to share information openly and solve problems as a team, creation of a culture of psychological safety where the different opinions are accepted, and resolving conflicts. By doing this, the UWEP projects will receive a more robust approach, where their teams can find their way to overcome complexities together and effectively overcome setbacks.

Furthermore, the study established the mediating role of team collaboration in the relationship between adaptive project management practices and project resilience. The study therefore suggests that UWEP should integrate the approach that encourages adaptive management and at the same time develops team collaboration to achieve optimal project resilience. This can be done through the creation of holistic capacity-building initiatives that instil adaptive planning skills and collaborative leadership abilities in project staff, the creation of project frameworks that require stakeholder participation and consultative decision-making, and the allocation of resources to help

support both the flexible operation models and team integration efforts. By doing this, the resiliency of UWEP projects will be improved by establishing a sturdy feedback loop in which adaptive practices will result in collaboration, and the resulting heightened collaboration will result in the project maintaining its overall adaptive capacity, guaranteeing developmental goals are sustainable.

5.4 Limitations and areas for further research

The study relied on a cross sectional research design. Although this design was effective in determining correlations and mediating effects, it inherently denies the possibility of determining causality or observing the time-varying relationships. To counter this, the study strictly used statistical procedures to generalize relationships and theoretical constructs in order to give a causal explanation by relying on the existing literature. However, longitudinal studies in the future need to be utilized to follow UWEP projects throughout their lifecycle to make a more robust interpretation of causal pathways and the dynamic development of project resilience in reaction to changing adaptive practices and collaborative activities.

Second, data collection was done using a structured questionnaire. Although this method enabled the researcher to make the data collection process consistent and easy to analyze quantitatively, it inherently restricted the richness and depth of responses, which could have included some rich contextual details or new themes that could have been obtained using a Ftive approach. Despite careful design and pre-testing of the questionnaire to address major constructs and maintain clarity, the self-reported data also presents a threat of social desirability bias due to the self-reported nature of the data. Nonetheless, mixed-method approach should be incorporated in future research by combining quantitative surveys and in-depth interviews, focus groups, or ethnographic observations into the UWEP projects. This would give a more comprehensive picture of the how

and why of the observed relationships, and would provide deeper contextual information about the lived experience of project teams and beneficiaries, and would add more qualitative information to the statistical results.

Lastly, the research is limited in its generalizability of the results because it only conducted the study on UWEP projects in Amuria District. Although offering useful information about a particular regional setting, the specific socio-economic, cultural, and operational features of Amuria might not be entirely generalized to other areas or women-oriented programs. It is therefore suggested that the study should be replicated in other similar grassroots development programs in other districts or through a wider scope of UWEP projects in other regions.

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APPENDIX I: DATA COLLECTION QUESTIONNAIRE

Dear Respondent,

I am a student at Busitema university pursuing a Master of Business Administration degree. As one of the requirements for being awarded with this qualification, I am conducting a study on a topic entitled, *"Adaptive Project Management Practices, Team Collaboration and Project Resilience among UWEP Project in Amuria District".* You have been identified as one of the resourceful persons to participate in this study. You are requested to answer the questions as honestly as possible to facilitate reliable conclusions and recommendations. All responses obtained will be strictly used for academic purposes and will be treated with anonymity and utmost confidentiality.

SECTION A: DEMOGRAPHIC CHARACTERISTICS

In the following questions, you are requested to tick the option that best suits you.

Section A (I): Respondents Characteristics

Q1. What is your age bracket?

Less than 30 years	30 – 39 years	40-49 years	50 years and above
1	2	3	4

Q3. What is your highest level of education?

Certificate	Diploma	Undergraduate Degree	Post Graduate
1	2	3	4

Section A (II): UWEP Project Characteristics

Q1. How long has this project been in existence?

Less than 1 year	1-2 years	3-5 years	6+ years
1	2	3	4

Q2. What is the sector where project belongs?

Production	Trade and Commerce	Others (Specify) ……..
1	2	3

NAME OF PROJECT:…….

SECTION B:

Under this section, the researcher is interested in ascertaining information on adaptive project management practices, team collaboration and project resilience. For each of the statements, you are supposed to indicate the extent to which you either agree or disagree. You are kindly requested to follow the scale provided in this section.

Scale: 1-Strongly Disagree (**SD**), 2-Disagree (**D**), 3- Not Sure (**NS**), 4- Agree (**A**) and 5-Strongly Agree (**SA**).

SECTION B (I): ADAPTIVE PROJECT MANAGEMENT PRACTICES

	STATEMENT	**SD**	**D**	**NS**	**A**	**SA**

	Flexibility					
FL1	The project management approach allows for changes in project scope and direction when necessary.	1	2	3	4	5
FL2	The team is open to adapting the project strategy based on changing circumstances.	1	2	3	4	5
FL3	The project team is flexible in adjusting timelines as required.	1	2	3	4	5
FL4	The project management plan allows for modifications based on new information or emerging risks.	1	2	3	4	5
FL5	The project team regularly reviews and revises project plans to accommodate unforeseen changes.	1	2	3	4	5
FL6	The project has the ability to shift resources quickly in response to challenges.	1	2	3	4	5
FL7	Changes in project priorities are handled smoothly by the team.	1	2	3	4	5
FL8	The team demonstrates flexibility in its decision-making to address new opportunities.	1	2	3	4	5
	Continuous Learning					
CL1	The project team encourages ongoing learning and professional development throughout the project lifecycle.	1	2	3	4	5
CL2	Lessons learned from previous projects are integrated into the current project to improve performance.	1	2	3	4	5
CL3	Team members are encouraged to acquire new skills and knowledge that enhance project success.	1	2	3	4	5
CL4	The team actively shares knowledge gained from previous project experiences to benefit the current project.	1	2	3	4	5
CL5	There is a culture of learning and experimentation within the project team.	1	2	3	4	5
CL6	The project team seeks feedback regularly to improve its performance.	1	2	3	4	5
CL7	Continuous learning is embedded into the project management processes to improve efficiency.	1	2	3	4	5
	Stakeholder Engagement					
SE1	The project actively involves stakeholders in key decision-making processes.	1	2	3	4	5
SE2	Regular communication with stakeholders is maintained to ensure their expectations are met.	1	2	3	4	5
SE3	The project team engages stakeholders to gather feedback and make necessary adjustments to project plans.	1	2	3	4	5
SE4	Stakeholder feedback is valued and incorporated into project activities.	1	2	3	4	5
SE5	The project management team ensures that stakeholders are well-informed about project progress.	1	2	3	4	5
SE6	The project team establishes and maintains strong relationships with key stakeholders.	1	2	3	4	5
SE7	Stakeholders are provided with regular opportunities to contribute to project discussions and decisions.	1	2	3	4	5
SE8	Stakeholder concerns and expectations are actively managed throughout the project lifecycle.	1	2	3	4	5

SECTION B (II): TEAM COLLABORATION

	STATEMENT	SD	D	NS	A	SA
	Effective Communication					
EC1	Team members communicate openly and transparently with each other.	1	2	3	4	5
EC2	The project team uses a variety of communication channels to ensure that all relevant information is shared.	1	2	3	4	5
EC3	There is an open exchange of ideas and opinions during team discussions.	1	2	3	4	5
EC4	Communication within the team is timely, allowing the project to run smoothly.	1	2	3	4	5
EC5	Team members are encouraged to ask questions to clarify misunderstandings.	1	2	3	4	5
EC6	Information is communicated clearly and effectively within the team.	1	2	3	4	5
EC7	The team holds regular meetings to discuss progress and resolve issues.	1	2	3	4	5
	Trust					
TR1	Team members have confidence in each other's ability to deliver quality work.	1	2	3	4	5
TR2	The project team values the contributions of each member.	1	2	3	4	5
TR3	Team members are dependable and can be relied upon to meet deadlines.	1	2	3	4	5
TR4	There is trust that team members will act in the best interest of the project.	1	2	3	4	5
TR5	The team promotes a culture of trust where members feel safe to share ideas and concerns.	1	2	3	4	5
TR6	The project team trusts each other’s expertise and professional abilities.	1	2	3	4	5
	Mutual Support					
MS1	Team members actively offer support to each other when challenges arise.	1	2	3	4	5
MS2	There is a strong sense of willingness to help within the team.	1	2	3	4	5
MS3	The project team encourages one another to overcome obstacles.	1	2	3	4	5
MS4	Team members share their knowledge and expertise to help others succeed.	1	2	3	4	5
MS5	There is a sense of collective responsibility in achieving the project goals.	1	2	3	4	5
	Joint Decision Making					
JD1	The team makes decisions collectively, considering the views and input of all members.	1	2	3	4	5
JD2	Team members are encouraged to participate in the decision-making process.	1	2	3	4	5
JD3	Decisions are made collaboratively to ensure that all perspectives are considered.	1	2	3	4	5
JD4	The project team uses consensus-based decision-making whenever possible.	1	2	3	4	5
JD5	There is a shared understanding and agreement on major decisions within the team.	1	2	3	4	5
JD6	All team members have the opportunity to influence important project decisions.	1	2	3	4	5

SECTION B (III): PROJECT RESILIENCE

SCALE		SD	D	N	A	SA
	Awareness					

AN1	Our project team actively monitors risks throughout the project lifecycle.	1	2	3	4	5
AN2	We routinely assess the project's vulnerability to external threats.	1	2	3	4	5
AN3	Early warning signs of potential disruptions are identified in a timely manner.	1	2	3	4	5
AN4	Our team frequently updates the risk register based on new information.	1	2	3	4	5
AN5	Environmental scanning is part of our routine project planning process.	1	2	3	4	5
AN6	Lessons from past disruptions are used to anticipate future risks.	1	2	3	4	5
AN7	Project stakeholders are regularly consulted to gather risk-related insights.	1	2	3	4	5
AN8	We are aware of regulatory or policy changes that may affect the project.	1	2	3	4	5
AN9	Our project team is trained to recognize signals of instability or uncertainty.	1	2	3	4	5
AN10	The project has mechanisms in place to flag emerging threats early.	1	2	3	4	5
AN11	Risk identification is integrated into all levels of project decision-making.	1	2	3	4	5
AN12	We can differentiate between high-probability and high-impact risks.	1	2	3	4	5
AN13	Changes in stakeholder expectations are quickly recognized.	1	2	3	4	5
	Adaptive Capacity					
AC1	Our project team can quickly revise plans in response to unexpected events.	1	2	3	4	5
AC2	Project roles and responsibilities can be reallocated when needed.	1	2	3	4	5
AC3	We are open to adjusting project goals when conditions demand it.	1	2	3	4	5
AC4	Project leadership supports adaptive decision-making.	1	2	3	4	5
AC5	Our project has contingency plans for a variety of disruption scenarios.	1	2	3	4	5
AC6	Communication structures allow for rapid dissemination of updates.	1	2	3	4	5
AC7	We learn from setbacks and apply lessons to current practices.	1	2	3	4	5
AC8	The project team is empowered to make situational decisions.	1	2	3	4	5
AC9	We are flexible in how we allocate resources during disruptions.	1	2	3	4	5
AC10	The project can maintain operations while transitioning during change.	1	2	3	4	5
AC11	There are feedback loops that support ongoing adjustment of strategies.	1	2	3	4	5

Thank You for your participation

Appendix II: Krejcie and Morgan (1970) table of sample size determination

N	**S**	N	**S**	N	**S**	N	**S**	N	**S**
10	**10**	100	**80**	280	**162**	800	**260**	2800	**338**
15	**14**	110	**86**	290	**165**	850	**265**	3000	**341**
20	**19**	120	**92**	300	**169**	900	**269**	3500	**346**
25	**24**	130	**97**	320	**175**	950	**274**	4000	**351**
30	**28**	140	**103**	340	**181**	1000	**278**	4500	**351**
35	**32**	150	**108**	360	**186**	1100	**285**	5000	**357**
40	**36**	160	**113**	380	**181**	1200	**291**	6000	**361**
45	**40**	180	**118**	400	**196**	1300	**297**	7000	**364**
50	**44**	190	**123**	420	**201**	1400	**302**	8000	**367**
55	**48**	200	**127**	440	**205**	1500	**306**	9000	**368**
60	**52**	210	**132**	460	**210**	1600	**310**	10000	**373**
65	**56**	220	**136**	480	**214**	1700	**313**	15000	**375**
70	**59**	230	**140**	500	**217**	1800	**317**	20000	**377**
75	**63**	240	**144**	550	**225**	1900	**320**	30000	**379**
80	**66**	250	**148**	600	**234**	2000	**322**	40000	**380**
85	**70**	260	**152**	650	**242**	2200	**327**	50000	**381**
90	**73**	270	**155**	700	**248**	2400	**331**	75000	**382**
95	**76**	270	**159**	750	**256**	2600	**335**	100000	**384**

Krejcie and Morgan (1970).

Note: “N” is population size

“S” is sample size.

Appendix III: Introduction Letter