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**PROGRAM: EXECUTIVE MASTER OF BUSINESS ADMINISTRATION**

**THE EFFECT OF DIGITIZATION ON ORGANIZATIONAL  
PERFORMANCE: MEDIATING ROLE OF WORKFLOW EFFICIENCY  
IN SELECTED GRADE 1 CONTRACTOR COMPANIES**

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**THIS THESIS IS SUBMITTED TO THE DEPARTMENT OF  
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Addis Abeba, Ethiopia**

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**June, 2025  
Addis Ababa, Ethiopia**

## **Declaration**

This study, the effect of digitization on organizational performance: mediating role of workflow efficiency in selected grade 1 contractor companies, is my original work, and I hereby declare that it has not been submitted for consideration for any other degree or award. I have followed the research ethics guidelines and credited all of the sources I used for this study.

**Submitted by: Abey Abebe Tefera**

A square box containing a handwritten signature in blue ink. The signature is stylized and appears to be 'Abey Abebe Tefera'.

Signature -----

**(The Researcher) Date:**

### **Letter of Certification**

This is to certify that Abey Abebe Tefera has carried out this thesis on the topic entitled "The effect of digitization on organizational performance: mediating role of workflow efficiency in selected grade 1 contractor companies." This work is original in nature and is suited for submission for the award of Executive Master of Business Administration.



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ADDIS ABABA UNIVERSITY  
COLLEGE OF BUSINESS AND ECONOMICS  
DEPARTMENT OF MANAGEMENT  
PROGRAM: EXECUTIVE MASTER OF BUSINESS ADMINISTRATION

APPROVAL SHEET


THE EFFECT OF DIGITIZATION ON ORGANIZATIONAL  
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IN SELECTED GRADE 1 CONTRACTOR COMPANIES.

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## **Acronyms and Abbreviation**

**API** - Application Programming Interface

**ANOVA** - Analysis of Variance

**BIM** - Building Information Modeling

**CAD** - Computer-Aided Design

**CI** - Confidence Interval / Continuous Improvement

**CRM** - Customer Relationship Management

**DMS** - Document Management System

**ERP** - Enterprise Resource Planning

**IoT** - Internet of Things

**IT** - Information Technology

**KII** - Key Informant Interview

**KPI** - Key Performance Indicator

**N** - Total Population

**n** - Sample Size

**PM** - Project Management

**SD** - Standard Deviation

## **ABSTRACT**

*This study investigates the effect of digitization on organizational performance, focusing on the mediating role of workflow efficiency in selected Grade 1 contractor companies. Utilizing both descriptive and explanatory research designs, the study explores characteristics and causal relationships between variables. A mixed-methods approach was employed, combining qualitative and quantitative techniques. Qualitative data were collected through surveys, questionnaires, and key informant interviews, while quantitative data were analyzed statistically. The target population comprised 18,518 employees from eighteen Grade 1 contractor companies, with a sample size of approximately 392 determined using Yamane's formula. Stratified and simple random sampling techniques were applied to ensure representative data, enhancing precision and reducing bias. Our study gathered insights from both primary data (surveys and interviews) and secondary data (existing documents) to analyze the impact of digitization. We used both descriptive and inferential methods, including multiple linear regressions, to examine the relationships between key variables. Our analysis identified that digitization was highly correlated with organizational performance improvement, pointing to a transformational role of digital initiatives. We found that training employees had an important and significant relationship with the performance achieved, consequently showing importance in maximizing the value of digital tools. Management support showed a meaningful correlation, which emphasized the role of leadership in digital transformation. We identified workflow efficiency as a critical mediator of this relationship. These results thus indicate a need for a balanced approach across these to ensure long-run success. We would thus advise the management that they should first invest on the digital equipment as well as employee capabilities while encouraging effective management support at the same time. The companies should also involve regular technological infrastructure and training programs assessment for best performance in today's dynamic construction industry within Addis Ababa.*

*Keywords: digitization, organizational performance, workflow efficiency, Grade 1 contractor companies.*

# CHAPTER ONE

## 1. INTRODUCTION

This part presents the study, highlighting the effect of digitization on organizational performance: mediating role of workflow efficiency in selected Grade 1 contractor companies. It begins with the background of the study, setting context and pertinence. The problem statement sets out particular issues and problems to be solved. Research questions are formulated to lead the investigation, with clearly set-out research objectives that state the purpose of the study. The significance of the study is further discussed to bring out its usefulness in the construction sector, specifically Grade 1 contractor firms in Addis Ababa. The scope and limitation of the study are also presented, along with definitions of the principal terms for the sake of clarity of the study throughout.

### 1.1. Background of the study

Digital transformation has become an important factor in making different organizations get better and more effective for all industries by improving communication, creating data-driven decisions, and encouraging innovation—main functions that can maintain competitiveness in the current marketplace (Davenport et al., 2010; Brynjolfsson & McAfee, 2017). A global study shows that organizations moving towards digitalization may process activities better, reduce cost, and productivity among others (Hund et al., 2021). However, the challenges like resistance to change, cybersecurity risks, and skill shortages must be dealt with to fully benefit from these advantages (Colombari et al., 2023). Globally, productivity increases by 20–30% due to digitization (Truant et al., 2021). Organizations using digital solutions tend to show a decreasing operating cost by 25% (Leitner-Hanetseder et al. (2021).

The digital technology also promotes teamwork, hence enhancing effectiveness as a whole. The World Bank (2021) estimates that digitization will increase Africa's GDP by \$300 billion by 2025 and provide millions of jobs, especially in the tech industry (African Development Bank, 2020). The African businesses that operate based on digital systems have up to 40% efficiency in workflow, thus their projects are completed quicker, Guenther (2017). Rapid economic growth and urbanization in Africa have made the impact of digitization especially noteworthy, with urban areas having a major impact on GDP (UNECA, 2020).

By improving infrastructure management and service delivery, digital technologies can assist in addressing urban challenges (OECD/PSI, 2020). However, factors like lack of technology access and poor digital infrastructure hinder implementation (Kanbur et al. In 2019. One nation that typifies Africa is Ethiopia, which is considerably experiencing urbanization and economic growth as a result of initiatives in the digital sector. In this respect, the government has invested in digital infrastructure to improve economic outcomes and public services (World Bank, 2015b). Digital technologies such as Building Information Modeling (BIM) and project management software are integrated within the building industry to enhance oversight and productivity on projects (Koroso et al. Digitization can significantly benefit the construction industry, as technologies such as workflow automation enable companies to dedicate themselves to strategic objectives instead of administrative work (Mendix, 2023).

Improved workflow efficiency through digital platforms ensures real-time communication and decision-making. Additionally, digital data analytics benefits businesses make informed choices about project schedules and resource allocation. It is also known that digital tools support sustainable construction methods by capitalizing on resource use and reducing waste. Digital Data analytics also assists companies in making well-informed decisions regarding resource allocation and project timelines. Digital tools also help to promote sustainable construction practices by optimizing resource consumption and minimizing waste. Even though digitization has many advantages to improve organizational performance and workflow efficiencies across the globe, its impact is most visible in Africa and Ethiopia. Digital transformation can help organizations in these industries optimize efficiency, collaboration, and sustainability by introducing changes in current performance, positioning them well in a competitive market. The effect of digitization on organizational performance is examined in this study, with the mediating role of workflow efficiency in selected Grade 1 contractor companies in Addis Ababa, Ethiopia. It aims to comprehend how digital tools improve overall performance in the construction industry by increasing performance and streamlining procedures. In a determination to demonstrate the mediating role of workflow efficiency in a subset of Grade 1 construction contractor companies, the study focuses on the impact of digitization on organizational performance.

## 1.2. Statement of Problems

Numerous studies have acknowledged that initiatives of digital revolution positively affects organizational productivity and workflow efficiency, however, there are still key challenges. Just 40% of respondents citing issues like data segregation and resistance to change, 35% mentioning problems with technology selection, and 32% mentioning implementation hurdles and with only 31% of organizations report high levels of effectiveness (World Bank, 2024).

Additionally, the broader African digital transformation context poses unique difficulties, such as inadequate infrastructure, budgetary constraints, and a lack of skilled labor (Baptista et al. 2020). Digital resources help Ethiopian higher education institutions increase productivity, reduce expenses, and minimize errors, but they still face significant research gaps (Shibiru Terefe, 2021).

For instance, not enough research has been done on the relationship between job performance and employee training on digital tools. It is imperative that management support for successful digital projects and the crucial role that technology infrastructure plays in implementing successful digital solutions are examined in greater detail. Numerous studies currently in existence rely on qualitative methodologies, which limit our comprehension of difficulties, especially in industries like construction. The preponderance of descriptive research highlights the necessity of more robust approaches, such as inferential analysis, to completely understand the variables influencing how digital transformation affects organizational performance in Ethiopian higher education. In her research from Martha Tadele (2022), and finds a positive correlation between MOENCOs leadership effectiveness and digitalization.

However, it does not investigate how different levels of digitalization influence organizational performance or the effects of workflow efficiency. It also neglects the link between employee training in digital tools and performance, overlooks management support for digital initiatives, and fails to consider how technological infrastructure impacts overall performance. Addressing these voids could yield a deeper understanding of digitalization's effects on organizations. Abel Solomon's study (2022) regarding the impact of IT in ten Ethiopian IT companies shows a positive association between IT utilization and overall performance.

Bayissa et al. (2010) surveyed in Addis Ababa, identifying concerns like stakeholder resistance and non-compliance with digitization standards.

The main gaps are the absence of cultural analysis to explain how organizational culture affects the adoption of digitization and inadequate investigation of the involvement of stakeholders in facilitating digital projects. The sparse comparison between sectors is limiting for insights into the particular challenges of various organizations. Eriksmo and Sundberg (2016) examined the impacts of digital technology on higher education but did not have a longitudinal study of long-term effects and did not determine faculty training requirements, which are critical for successful implementation.

Mwangi and Kariuki (2015) researched information technology in Kenyan government services, reporting significant gains in performance. They did not differentiate effects by sector or consider the persistence of digital practice, losing valuable employee response to their digitization experiences. Vuori et al. (2019) researched problems in knowledge work digitized, discovering positive as well as negative effects, but not fully addressing psychological effects on productivity or providing strategic recommendations for breaking through challenges.

Collectively, these studies emphasize the need for further exploration of cultural dynamics, stakeholder engagement, long-term impacts, and employee perspectives in digitization contexts. Alemayehu Geda's study (2022) on digitalization in Ethiopia's financial sector highlights significant growth effects but reveals critical gaps, such as a narrow sector focus and a lack of cross-sector comparisons. The study also insufficiently examines the impact of employee training and the quality of technological infrastructure. Lastly, Rahman et al. (2024) review literature on the impact of digital transformation on organizational performance, noting productivity improvements but also gaps, including a reliance on quantitative methods and minimal focus on management roles. Kallmuenzer et al. (2024) analyze digitalization in small and medium-sized enterprises, identifying enablers and barriers but lacking quantitative data on performance outcomes.

Nevertheless, challenges such as inadequate technology and subpar infrastructure remain, with Ethiopia positioned 150th in ICT readiness. Additionally, there are gaps in understanding how workforce skills and training influence IT adoption, highlighting the necessity for comparative and longitudinal research across different sectors and firm sizes.

Tigist Bezu Mengistu (2022) looks at the role of digitization in enhancing financial inclusion, finds positive impacts but pays no attention to comparative studies or long-term sustainability.

This study aims to identify and address research gaps related to the effects of digitization on organizational performance, with a focus on the mediating role of workflow efficiency in selected Grade 1 contractor companies. Previous research has highlighted several shortcomings, such as insufficient exploration of how varying levels of digitization impact performance, the importance of employee training in using digital tools, and the role of management support for digital initiatives. This research seeks to fill these gaps by examining the effects of digitization on organizational performance, investigating the relationship between workflow efficiency and performance, and assessing how the quality of technological infrastructure influences overall outcomes in these companies.

### **1.3. Research question**

1. What are the effects of digitization levels on organizational performance in Grade 1 contractor companies in Addis Ababa?
2. How does workflow efficiency mediate the relationship between digitization and organizational performance?
3. In what ways does employee training in digital tools impact organizational performance, considering workflow efficiency as a mediator?
4. How does management support influence the implementation of digital initiatives and their effect on performance, with workflow efficiency as a mediator?
5. How does the quality of technological infrastructure affect organizational performance through the mediation of workflow efficiency?

### **1.4. Research Objective**

#### **1.4.1. General objective**

The general objective of this study is to examine the effect of digitization on organizational performance: mediating role of workflow efficiency in selected grade 1 contractor companies.

### **1.4.2. Specific Objectives**

1. To analyze the effects of digitization levels on organizational performance in Grade 1 contractor companies in Addis Ababa.
2. To investigate the role of workflow efficiency as a mediator between digitization and organizational performance.
3. To examine how employee training in digital tools affects organizational performance, with workflow efficiency as a mediator.
4. To assess the influence of management support on the implementation of digital initiatives and their effect on performance, mediated by workflow efficiency.
5. To evaluate how the quality of technological infrastructure affects organizational performance through the mediation of workflow efficiency.

### **1.5. Significance of the Study**

The goal of this study was to investigate how workflow efficiency functions as a mediator in case of Grade 1 contractor which located in Addis Ababa and how digitization affects organizational performance. It has several facets of significance. To meet today's demands, the construction industry needs to be more efficient and effective, and this study offered insightful information on how digital tools can help. Contractors, managers, and legislators are among the industry stakeholders who directly benefit from our findings as they make well-informed decisions regarding digital strategies and technology investments. This makes it easier for businesses to deal with the challenges of digital transformation. This study addressed gaps in the literature on digital adoption, particularly in Ethiopia's construction sector, and made a significant contribution. The contractor businesses in becoming more competitive in a market that is changing quickly by determining how digitization impacts organizational performance. The study provided policymakers with recommendations based on solid evidence. The purpose of these suggestions is to assist in developing a regulatory framework that actively promotes the industry's adoption of digital technology. In order to benefit Ethiopia's construction industry as a whole, this study aimed to promote innovation and growth among a chosen group of Grade 1 contractor businesses in Addis.

## **1.6. Scope of the study**

This study aims to investigate the effect of digitization on organizational performance and the role that workflow efficiency plays as a mediator in a selection of Grade 1 contractor companies located in Addis Ababa, Ethiopia's capital and a major center for development and construction activities. The geographic focus was limited to Addis Ababa, where 18 Grade 1 contractor companies were chosen for their ability to handle large-scale projects. Defence Construction, Justice Construction, ASER Construction, Sunshine Construction, Rama Construction, Yotek Construction, TNT Construction, OVID Construction, SAMCON Construction, Gemshu Beyene Construction, Tilahun Abebe Construction, Tesfaye Legesse Construction, Crafts Construction, Zamra Construction, Damera Construction, Gutema Firisa Construction, Diriba Defersha, and ECWC were among these businesses. The effect of the digital tools and technologies used by these contractors on workflow effectiveness and overall organizational performance was evaluated by the research. In order to make sure that the results addressed current issues and prospects in the industry for the years 2024–2025, it assessed current practices and attitudes toward digitization. To cultivate a complete understanding of effects of digitization, the perspectives of many stakeholders, including top, middle and lower management, employees, and IT specialists, were gathered.

This research utilized both descriptive and explanatory designs in a qualitative and quantitative approach. In an effort to offer helpful guidance for enhancing the digital transformation of the construction industry, it focused on these areas.

## **1.7. Limitations of the Study**

Regardless of providing insightful data about digitization in selected Grade 1 contractor companies, our research has some shortcomings. First, the results may not accurately reflect the whole construction industry due to our focus on only 18 Grade 1 contractor companies, which could limit the generalizability of our findings. Second, it was difficult to obtain internal firm data, which restricted our ability to thoroughly examine the precise effects of particular digital tools. Third, our conclusions may not be as objective if we mostly rely on qualitative data from surveys and interviews, which could bring biases based on personal opinions. Fourth, our conclusions may soon become old when new digital tools and procedures are introduced into the market, given the speed at which technology is developing. Admitting these limitations draws a balanced perception on our study's findings and advises paths for future research.

## **1.8. Definition of Terms**

**Infrastructure Quality:** This refers to having the right physical and organizational arrangements like network systems, hardware, and technology of the information technology—that supports digital tools. So that construction companies can effectively use digital technologies and keep their operations running smoothly.

**Workforce Skills and Training:** This refers to the knowledge and skills employees need to confidently work with digital tools. Providing proper training ensures that the team is ready and capable of embracing new technologies, which is vital for modern construction practices.

**Regulatory Environment:** These are the laws, policies, and legal practices that direct how digital technologies can be used in the construction sector.

**Financial Accessibility:** This means how easy is it for construction companies to get the budget they require to finance in digital solutions.

**Organizational Culture:** This means the beliefs, behaviors and shared values, within an organization that impact how employees work together.

**Market Competition:** This means the competitive environment within the construction industry that influences company strategies and practices. Which delays the adoption of digital technologies among contractor companies, affecting their overall performance and growth.

## **1.9. Organization of the study**

This paper is organized into five key chapters. The introduction part is covered in Chapter one presents background of the study, statement of problems, research questions, objectives, significance, scope, limitations, and definition of terms. Chapter two explores existing literature, including conceptual, empirical, theoretical perspectives, conceptual framework and Hypothesis. Chapter three details the methodology, covering the study area, research approach and design, population and sample size and technique, data sources, data collection, ethical considerations, and data analysis techniques. Chapter four presents results and discussion of the findings, while chapter five summarizes the findings, conclusion, offers recommendations and direct future research direction.

## CHAPTER TWO

### 2. REVIEW OF RELATED LITERATURE

This section looks at the basic theoretical and empirical research behind digitization and how it affects how well organizations perform. It discusses important theories that link digital transformation to better workflow and improved results. The section also reviews studies showing how digital tools can increase productivity, make supply chains more efficient, and improve operations by streamlining processes, cutting costs, and strengthening management. It examines frameworks that help organizations use digital tools effectively, addressing challenges like budget issues, data security, and resistance from employees. It stresses the requirement for careful planning, fast and clear communication, and proper training to make the most of digital transformation initiatives.

#### 2.1. Conceptual Review

##### 2.1.1. Definition and Scope of Digitization

Digitization is the process of changing physical materials and information into digital forms. This change has significantly affected how organizations work, especially in higher education, where service quality and accessibility are very important (Óri et al., 2024). It will not only automates everyday tasks but also changes the culture, workflows, and overall performance of organizations.

One major benefit of digitization is improved efficiency. Faculty members benefit from digital tools that help track student progress and provide individualized feedback, which leads to better learning outcomes (Rahman et al., 2024). For example, digital platforms permit students to access course materials anytime and from anywhere, removing geographical barriers and increasing learning flexibility. By automating tasks like enrollment and grading, institutions can reduce mistakes and speed up service (Kachali & Kachali, 2021). Beyond efficiency, digitization fosters a culture of innovation and adaptability. Organizations embracing digital transformation tend to encourage collaboration, experimentation, and continuous learning (Rahman et al. (2024). In higher education, this cultural shift supports a more student-centered approach, where data analytics inform decisions that better meet learners' needs (Gupta & Singh, 2023). Leadership plays a crucial role here, as supportive management can drive the adoption of new technologies and motivate staff to embrace change (Johnson, 2023).

Workflows are also fundamentally changed by digitization. Cloud computing and integrated digital systems allow for seamless information sharing across departments, improving coordination and decision-making (Garcia, 2024). Mobile technologies empower faculty and staff to work remotely, enhancing productivity and work-life balance (Smith, 2024). In practice, this means quicker responses to student inquiries and more effective collaboration on research and administrative tasks (Jones, 2023). However, the transition to digital is not without challenges. Cybersecurity risks increase as more sensitive data is stored and shared online, requiring robust protection measures (Williams, 2022). Additionally, the digital divide remains a concern, as unequal access to technology and digital skills can exclude some students and staff from fully benefiting (Gupta & Singh, 2023). Therefore, continuous investment in both technology infrastructure and training is essential to ensure inclusive and secure digital transformation (Zhang and Zhao 2021). Digitization offers significant opportunities to enhance organizational performance in higher education by improving efficiency, fostering innovation, and streamlining workflows. Yet, success depends on strong leadership, ongoing training, and addressing challenges such as cybersecurity and access gaps.

### **2.1.2. Impact on Workflow Efficiency**

Through the reduction of time, expenses, and errors that are frequently associated with traditional processes, digitization significantly increases workflow efficiency. Research continuously demonstrates that companies that use digital tools experience improved service delivery and more efficient administrative processes. According to Lee and Kims (2022) research, digitization considerably decreased operational delays and redundancies in Ethiopian higher education institutions. For teamwork to be strengthened, digital communication channels must be integrated. By enabling real-time information sharing, these tools help teams overcome communication obstacles like distance. Instantaneous information sharing facilitates faster decision-making and expedites workflows, allowing organizations to react quickly to changing conditions (Kachali & Kachali, 2021).

In addition to increasing efficiency, digitization fosters innovation and a culture of constant improvement inside businesses. Employees who become more accustomed to using digital tools are more likely to identify inefficiencies and offer suggestions for ways to enhance current

workflows. In today's dynamic business environment, maintaining a competitive edge requires a proactive approach to problem-solving (Zhang & Zhao, 2021).

Reducing manual processes also reduces human error, which improves operational accuracy and dependability. Businesses that digitize report not only time savings but also improved service quality because automated systems can complete tasks reliably without the fluctuations that come with human input (Gupta & Singh, 2023).

Digitization has a profound and broad effect on workflow efficiency. Organizations may achieve notable gains in productivity and service quality by getting rid of duplications, improving teamwork, and encouraging creativity. As digitization develops further, it will play an increasingly important role in establishing operational excellence and effective workflows, positioning businesses for success in the digital era (Tumbas & Barlow, 2023).

### **2.1.3. Organizational Performance Metrics**

It is evident from a number of important metrics, including competitiveness, productivity, and innovation, that digitization and organizational performance are related. By facilitating data-driven decision-making and optimizing operations, digital transformation has been shown to increase these metrics. Businesses that use cutting-edge technologies frequently report increases in productivity and effectiveness, which improves resource allocation and reduces production costs (Gupta and Singh, 2023).

Organizations that use digitization see notable performance improvements, according to empirical data. For example, a systematic review found that digital transformation increases organizational resilience and improves performance metrics (Tumbas & Barlow, 2023). As businesses deal with issues like the COVID-19 pandemic, which highlighted the necessity of agility and adaptability in business practices, this relationship has become even more important.

Through the utilization of data analytics, digitization enables organizations to make well-informed decisions that lead to improvements in performance. Organizations can promptly detect and resolve operational inefficiencies by utilizing tools that offer real-time insights. According to Zhang and Zhao (2021), this proactive approach not only increases productivity but also fosters a culture of innovation and continuous improvement, which is crucial for maintaining competitiveness in the fast-paced market of today.

Companies are better equipped to innovate when they use digital technologies efficiently. By facilitating employee collaboration and knowledge sharing, digital tool integration inspires fresh concepts and innovative solutions. Collaboration is essential for fostering innovation because different viewpoints lead to more effective approaches to problem-solving (Kachali & Kachali, 2021).

Beyond internal operations, digitization also has a positive impact on organizational performance metrics. Improved customer loyalty and satisfaction are frequently the results of increased efficiency and innovative capacity. Increased market competitiveness is anticipated for businesses that can swiftly adapt to the needs and preferences of their customers through digitalized processes (Lee & Kim, 2022).

Digitization ultimately has a significant effect on organizational performance metrics. By facilitating data-driven decision-making, encouraging innovation, and simplifying operations, digitization prepares businesses to prosper in a challenging and competitive environment. Sustained success will depend on an organizations capacity for innovation and adaptation as it continues to embrace digital transformation.

#### **2.1.4. Challenges in Implementing Digitization**

Despite the clear benefits of digitization, companies often face significant challenges when trying to implement it. Some of the main issues include a shortage of qualified workers, inadequate training, outdated infrastructure, and resistance to change. A key problem is the lack of skilled professionals who can manage and use digital technologies effectively. Many organizations struggle to find employees with the right skills, which can accelerate their digital transformation efforts. This skills gap can make it hard for organizations to take full advantage of their digitization initiatives, preventing their ability to innovate and compete in their industry (Gupta & Singh, 2023; Kachali & Kachali, 2021).

Another important issue is insufficient training for current employees. When new technologies are introduced, workers may feel confused and unsure about how to use them, leading to resistance and low adoption rates. To tackle this, it's crucial to have comprehensive training programs that not only teach technical skills but also promote a mindset open to change and continuous learning (Tumbas & Barlow, 2023; Zhang & Zhao, 2021).

Inadequate infrastructure is also a major difficulty to successful digitization initiative implementations. Businesses need to have the right resources and technology, such as different Information Technology products (like high capacity computers, strong cyber security, reliable internet, and modern IT systems, to support new digital tools. Without a solid and updated infrastructure, even the best digital transformation initiatives may not reach their maximum potential (Gupta & Singh, 2023).

Finally, cultural resistance to change can be a significant challenge. Employees may hesitate to adopt digital solutions because they are unfamiliar or uncomfortable with them. Overcoming this resistance requires effective change management strategies (Kachali & Kachali, 2021; Tumbas & Barlow, 2023). To create a more inclusive environment, organizations should promote a culture of innovation and acceptance by involving employees in the change process and appreciating their feedback. Although digitization offers many advantages, successful implementation requires organizations to carefully address various challenges. By tackling skill gaps, providing adequate training, enhancing infrastructure, and fostering an innovative and adaptable culture, organizations can significantly improve their chances of fully benefiting from digital transformation.

## **2.2. Empirical Review**

In Ethiopia, digitization has drawn a lot of scholarly attention, with many studies looking at how it affects organizational performance. Understanding recent reports like Just 31% of organizations report high effectiveness in their digitization efforts, according to a recent Baptista et al (2024) report. We can conclude that organizations are still facing significant obstacles, even if digitization can improve collaboration and workflow efficiency,

Issues with technology selection (35 percent), implementation (32 percent), isolated data, and cultural resistance to change (40 percent) are among the main challenges. These Ethiopian-specific difficulties are a reflection of larger African problems, including a lack of funding, poor infrastructure, and a lack of skills (Baptista et al., 2020).

Digital tools are already providing significant advantages to Ethiopian higher education institutions, such as improved productivity, lower expenses, and fewer mistakes (Shibiru Terefe, 2021). But there are still important research gaps. The important connection between employee training in digital tools and how it affects job performance, for example, is still mostly unknown.

Furthermore, a more thorough examination of management support for digital projects is obviously required. It is common to undervalue the quality of technology infrastructure, and more research is needed to determine the precise impacts of different digital tools in various departments. A thorough understanding is limited by the heavy reliance on qualitative methods in many current studies, especially in industries like construction. The need for a more thorough approach, including inferential analysis, to fully understand digitizations impact on Ethiopian higher education and to clarify relationships between variables is highlighted by these methodological limitations, which are frequently limited to descriptive research. While many studies have clarified some aspects of digitization, they have also failed to examine important areas. Martha Tadeles (2022) research at MOENCO demonstrated a favorable correlation between leadership effectiveness and digitization.

However, it didnt investigate the impact of workflow efficiency on results or how various degrees of digitization affect overall organizational performance. Importantly, it did not examine the effect of management support, employee training on digital tools, or the influence of the quality of the technology infrastructure on performance. Abel Solomons (2022) study of ten Ethiopian IT companies revealed a favorable relationship between business performance and IT adoption, usage, and investment.

With Ethiopia ranked 150th in ICT readiness, problems like poor infrastructure and insufficient technology still exist. Understanding how workforce training and skills affect IT adoption will require more research, with a focus on comparative and longitudinal studies across a range of industries and firm sizes. Bayissa et al(2024). A survey conducted in Addis Ababa in 2010 found issues such as non-compliance with digitization standards and resistance from stakeholders. The absence of cultural analysis to clarify how organizational culture affects acceptance and the lack of investigation into stakeholder involvement in assisting digitization projects are two major gaps. Additionally, the study failed to compare digitization across sectors, which limited its ability to identify particular challenges.

Using a case study, Eriksmo and Sundberg (2016) narrowly examined digital technologies in higher education without conducting a longitudinal analysis of their long-term effects on academic results. Additionally, it failed to address the critical need for faculty to receive training in digital

tools. Mwangi and Kariuki (2015) examined the use of information technology in Kenyas public services and observed improvements in performance.

Nevertheless, their short-term focus overlooked the sustainability of digital practices, and they failed to distinguish impacts across different sectors. Importantly, there were no employee perspectives on their experiences with digitization. Vuori and associates. Examined issues with digital knowledge work in 2019 and found both advantages and disadvantages. They did not, however, adequately examine the psychological impacts on productivity or offer concrete strategic suggestions to address the difficulties brought on by digitization. Alemayehu Gedas (2022) research emphasized the noteworthy growth impacts of digitalization in Ethiopias financial industry. However, it had some significant flaws, such as a narrow focus on a single sector, no cross-sector comparisons, a lack of consideration of the effects of employee training, no analysis of management support, and a neglected level of technological infrastructure. Rahman & Co. While acknowledging gains in productivity and job satisfaction, &039s (2024) review of the literature on digital transformation and organizational performance identified gaps, including a reliance on quantitative methods, a lack of qualitative insights, a lack of investigation into the effects on particular sectors, and a lack of attention to management roles.

Kallmuenzer and associates. In their qualitative study on the adoption of digitalization in SMEs, &039;s (2024) found both barriers, such as risk-averse cultures, and facilitators, such as appropriate technologies and skilled personnel. There are still gaps in the analysis of sector-specific issues and the provision of numerical data on performance results.

A study conducted in Ethiopia by Tigist Bezu Mengistu in 2022 on financial inclusion through saving groups (edir) revealed benefits for efficiency and accessibility. It did, however, have a number of shortcomings, such as a lack of comparative research with non-digitized groups, a restricted emphasis on user perspectives, and inadequate analysis of long-term sustainability. Together, these studies highlight the urgent need for more thorough and in-depth investigation into digitization in Ethiopia.

Future research should use a variety of approaches, carry out cross-sectoral and longitudinal analyses, and include important components like management support, staff training, and the caliber of technology infrastructure in order to fill in these gaps. This method will offer a more

comprehensive comprehension of how, in the Ethiopian context, digitization can actually unleash organizational potential.

**Table 2.1: Summary of Empirical Review**

<b>Author(s) &amp; Year</b>	<b>Objective</b>	<b>Major Findings</b>	<b>Gaps</b>
Shibiru Terefe (2021)	Assess the benefits of digital tools in Ethiopian higher education.	Digital tools improve efficiency, reduce costs, and minimize errors.	Lack of exploration on employee training's impact on performance and management support for digital projects.
Martha Tadele (2022)	Explore the relationship between digitalization and leadership effectiveness at MOENCO.	Found a positive correlation between digitalization and leadership effectiveness.	Does not address varying levels of digitization's impact or the influence of workflow efficiency.
Abel Solomon (2022)	Analyze the impact of IT on business performance in Ethiopian IT firms.	Positive correlation between IT usage and overall performance.	Insufficient understanding of workforce skills and the need for longitudinal studies across different sectors.
Bayissa et al. (2010)	Identify challenges faced in digitization in Addis Ababa.	Noted stakeholder resistance and non-adherence to digitization standards.	Lacks cultural analysis and limited comparisons across sectors.
Eriksmo and Sundberg (2016)	Investigate the impact of digital technologies in higher education.	Study focused on a single case, lacking broad applicability.	No longitudinal analysis of long-term effects or faculty training needs addressed.
Mwangi and Kariuki (2015)	Examine effects of information technologies in Kenya's public services.	Significant performance improvements noted.	Did not differentiate impacts across sectors and neglected insights from employees.

Vuori et al. (2019)	Explore challenges in digitized knowledge work.	Identified both positive and negative impacts of digitization.	Insufficient exploration of psychological effects on productivity and lack of strategic recommendations.
Alemayehu Geda (2022)	Assess the impact of digitalization in Ethiopia's financial sector.	Significant growth effects noted due to digitalization.	Limited sector focus, insufficient exploration of employee training impacts, and lack of infrastructure quality analysis.
Rahman et al. (2024)	Review literature on the impact of digital transformation on organizational performance.	Improvements in productivity observed.	Reliance on quantitative methods and minimal focus on management roles in facilitating transformation.
Kallmuenzer et al. (2024)	Analyze digitalization in small and medium-sized enterprises (SMEs) and its effects on performance.	Identified enablers and barriers to digitalization in SMEs.	Lacks quantitative data on performance outcomes and sector-specific challenges.
Tigist Bezu Mengistu (2022)	Examine digitization's role in enhancing financial inclusion through saving groups in Ethiopia.	Positive impacts on accessibility and efficiency highlighted.	Limited focus on user perspectives, long-term sustainability, and comparative studies with non-digitized groups.

*Source:- Researcher Empirical Review Summary Report 2025*

### **2.3. Research Gaps**

Many studies cover the effects of digitalization in general, but our thorough understanding is limited by a number of important research gaps, especially when it comes to Ethiopia. It is imperative to close these gaps in order to give organizations navigating digital transformation useful insights. The effects of digitalization on different industries, like construction, healthcare, and education, are not adequately distinguished by most research. This hinders the creation of specialized strategies by making it difficult to comprehend the particular opportunities and challenges that each sector faces as it moves toward digitalization. Very little research has been

done on the direct relationship between job performance and employee training in digital tools. Effective training programs can significantly increase employee productivity and overall organizational performance, as numerous studies fail to adequately demonstrate. Lack of knowledge could make it difficult for businesses to put training plans into action that actually support their digital objectives. Likewise, the crucial role that management support plays in successful digital initiatives is frequently not sufficiently covered in the literature that is currently available. It usually ignores the impact that different degrees of management commitment and engagement have on the results of digital projects. Understanding the relationship between these factors can help organizations tackle the challenges of digitalization. The importance of having good technological infrastructure is often overlooked, even though it plays a crucial role. Many studies do not look closely at how these factors directly affect the effectiveness of digital solutions. For successful digitalization, a strong technological foundation is essential, especially given the infrastructure issues faced by many businesses in Ethiopia. Finding ways to address these gaps could lead to better plans for technological readiness.

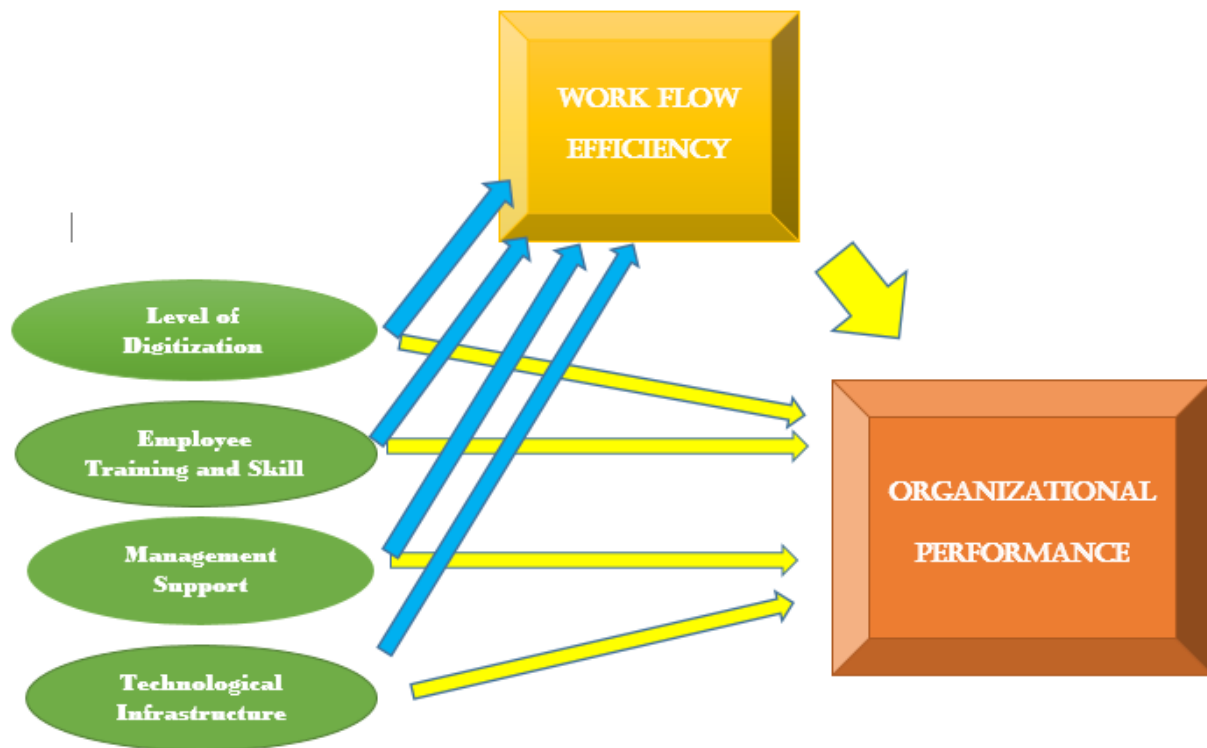
Moreover, current research often relies heavily on qualitative methods, which, while providing valuable insights, may not capture broader trends. To truly understand the links between key factors like organizational performance, level of digitization, employee training and management support, there is a strong need for more quantitative research using statistical methods. To better comprehend the digital effects over organizational performances.

To better grasp how digitization influences organizational performance in Ethiopia, it is crucial to address these research gaps. Future studies should employ robust quantitative and longitudinal approaches, thoroughly investigate the roles of management support, employee training, and technology infrastructure, and explore industry-specific impacts. This comprehensive understanding will better equip Ethiopian organizations to face the challenges of digitalization and achieve sustainable growth in a digital world.

Additionally, most existing studies focus on short-term results and overlook the long-term impacts of digitization on organizational performance. Longitudinal research is essential to understand how digital initiatives evolve over time and their lasting effects on performance metrics.

## 2.4. Conceptual Framework

Figure 2.1 Conceptual Frameworks



*Source: Shibiru Terefe et al. (2021)*

The conceptual framework of this study aims to examine the complex relationship between the independent variables and the organizational performance as dependent variable for Grade 1 contractor organizations in Addis Ababa, Ethiopia. It seeks to clarify how these factors interact and influence a company's effectiveness and success. In this context, organizational performance is the dependent variable.

The research focuses on organizational performance, which reflects the overall effectiveness of these construction contractor companies. KPI's such as project completion rates, customer satisfaction, operational efficiency, and profitability will be used to assess this performance. A company with high organizational performance successfully meets its strategic goals and responds to market demands (Shibiru Terefe, 2021).

Process efficiency acts as the mediator variable in this framework. Workflow efficiency represents the improvements and time savings achieved through digitization. Effective workflows are essential for reducing delays and managing resources efficiently. In the construction industry, where time directly affects costs, the ability to complete projects more quickly and efficiently enhances competitiveness. This variable emphasizes the importance of using digital tools to streamline operations, leading to better resource allocation and quicker project completion (Martha Tadele, 2022).

Another key independent variable is the level of digitization, which shows how well digital tools and technologies are integrated into an organization's operations. This includes a wide range of solutions, from digital communication platforms to project management software. It is expected that higher levels of digitization will enhance operational efficiency by improving decision-making and simplifying processes. Businesses that successfully use digital tools, for instance, can access real-time data analytics, automate repetitive tasks, and lower human error—all of which improve performance (Alemayehu Geda, 2022). Employee Training and Skills: One of the most important factors is how well-versed the workforce is in using digital tools. Employee education and skill development emphasize how important it is to give employees the skills and information they need to use technology efficiently.

Skilled workers can maximize the use of digital tools, leading to improved organizational performance and productivity. By investing in comprehensive training programs, businesses ensure that their employees have the skills needed to adapt to the fast-evolving technological landscape and foster a culture of lifelong learning (Abel Solomon, 2022). The role of leadership is crucial in building a digital culture within an organization. Effective management support is essential for the successful implementation of digital initiatives. Leaders who actively endorse digital transformation create an environment that encourages innovation and risk-taking. This highlights that even the most advanced digital tools may fail without support from upper management. Leadership is vital for aligning organizational strategies with digital initiatives and ensuring that all employees understand the significance and benefits of adopting digital solutions (Vuori et al., 2019).

This aspect evaluates the availability and quality of technology needed to support digital initiatives. A strong technology infrastructure is critical for the effective deployment and use of digital tools. In today's digital age, businesses need more than just advanced software and modern devices; they also require a reliable internet connection and robust cybersecurity measures. This foundational infrastructure allows organizations to fully leverage digital tools, enhancing overall operational efficiency. Conversely, insufficient infrastructure can limit the benefits of even the most innovative technologies. As noted by Bayissa et al. (2010), factors like the level of digitalization, employee training, management support, and the quality of technological infrastructure all influence workflow efficiency. Workflow efficiency is key to determining overall organizational performance.

This conceptual framework suggests that by improving these elements, businesses can streamline workflows and boost organizational effectiveness. For companies in Addis Ababa, understanding these interconnections is crucial for leveraging digital transformation to enhance operations. In an increasingly digital world, this model provides valuable insights into how various factors interact to drive success. Developing strategies based on this understanding is essential for achieving better outcomes. As emphasized by Kallmuenzer et al. (2022) and Tigist Bezu Mengistu (2024), understanding these dynamics is fundamental for businesses aiming to navigate the complexities of digitalization and achieve sustainable growth.

## **2.5. Hypotheses of the study:**

This study investigates how level of digitization, employee training and skill, Management Support and Technological infrastructure impacts company's performance, with a particular focus on how workflow efficiency serves as a mediating variable. By examining these relationships and understanding ground facts, the study aims to offer practical recommendations for improving overall organizational developments.

### **H1: Effect of Independent Variables on Organizational Performance**

- **H1a:** A higher level of digitization positively impacts organizational performance.
- **H1b:** Employee training and skills positively influence organizational performance.
- **H1c:** Management support has a positive effect on organizational performance.
- **H1d:** Technological infrastructure positively affects organizational performance.

## **H2: effect of Independent Variables on Workflow Efficiency (Mediator)**

**H2a:** Higher Digitization Level positively influences Workflow Efficiency.

**H2b:** Employee Training and Skills have a positive effect on Workflow Efficiency.

**H2c:** Management Support positively affects Workflow Efficiency.

**H2d:** Technological Infrastructure positively influences Workflow Efficiency.

## **H3: effect of Workflow Efficiency on Organizational Performance (Dependent Variable)**

**H3:** Workflow Efficiency positively affects Organizational Performance.

## **H4: Mediating Role of Workflow Efficiency**

**H4:** Workflow efficiency significantly mediates the relationship between the independent variables (Digitization Level, Employee Training and Skills, Management Support, and Technological Infrastructure) and positively affects organizational performance (the dependent variable).

## **CHAPTER THREE**

### **3. RESEARCH METHODOLOGY**

This chapter presents which methods was used in order to conduct this research .It deals with the research approach, design, methodology deployed in conducting the research. The research population was presented along with the method of selection of the sample. The collection instrument and the techniques of analysis and method of analysis are all were discussed.

#### **3.1. Research design**

As per literatures discuss, there are four types of research designs, namely descriptive, exploratory, experimental and explanatory as per Akhtar, (2016). Our Study used the descriptive and explanatory research design methods out of the four alternative based on the objective of the study. Our study's descriptive section focused on describing the variable characters and, patterns. This allowed us to get a clear picture of the current state of affairs. In addition, to identify causal connections and relationships among the variables explanatory design has been used. We were able to form more comprehensive and richer explanations for the events we witnessed, using both research design methods.

#### **3.2. Research Approaches**

According to conceptual literatures there are two major approaches to research, qualitative research approach and quantitative research approach Kothari, (2004). Our study used a mixed-methods approach, combined both quantitative and qualitative results a better representation. We used structured questionnaires and interview questionnaires to collect inclusive considerations, thoughts opinions and thoughts from participants, allowing them to share their perspectives in their own words. To make deeper this understanding, we also conducted interviews with key individuals who brought valuable insights related to the research topic. We have also analyzed numerical data through statistical methods to identify trends and patterns. By merging these diverse sources of data, we were able provide a well-rounded, clear understanding of the subject and to strengthen our findings.

### 3.3. Target Population, Sample Size, and Sampling Techniques

#### 3.3.1. Target Population

According to Mann, (1995) a research population consists of individuals, items or objects whose characteristics are being studied. Therefore, the target population of this study involves 18,518 employees from eighteen Grade 1 contractor companies in the construction industry working at different levels and roles. By capturing insights from employees across various positions, the study aimed to offer a well-rounded perspective on the effect of digital transformation within these companies. This diverse group was crucial for understanding how digitization affects workflow and overall organizational performance. Concentrating on this range of organizations helped ensure that the findings would be relevant and useful to the wider construction sector.

**Table 3.1. Target Population**

<b>S.No</b>	<b>Company Name</b>	<b>Total Staffs</b>
1	ECWC	7820
2	Defense Construction	811
3	Justice Construction	213
4	ASER Construction	834
5	Sunshine Construction	1139
6	Rama Construction	616
7	Yotek Construction	503
8	TNT Construction	1509
9	OVID Construction	653
10	SAMCON Construction	270
11	Gemshu Beyene Construction	574
12	Tilahun Abebe Construction	1689
13	Tesfaye Legesse Construction	239

14	Crafts Construction	114
15	Zamra Construction	469
16	Damera Construction	191
17	Gutema Firisa Construction	249
18	Diriba Defersha	625
	<b>Total</b>	<b>18518</b>

**Source: The target population is based on documents from each company, including annual reports for 2024.**

### **3.3.2. Sample Size Determination**

The study used Yamane (1967) formula to determine sample size:

Formula:

$$n = N / (1 + N (e^2))$$

**Where:**

- N = total target population (18518)
- e = margin of error (0.05)

#### **Calculation Steps:**

1. Substitute the values into the formula:

$$n = 18518 / (1 + 18518 \times (0.05)^2)$$

2. Calculate  $(0.05)^2$ :

$$(0.05)^2 = 0.0025$$

3. Then calculate:

$$18518 \times 0.0025 = 46.3$$

4. Substitute back into the formula:

$$n = 18518 / (1 + 46.3)$$

$$n = 18518 / 47.3 \approx 391.5$$

Rounding to the nearest whole number, the sample size is approximately **392**.

### **Table 3.1. Proportional Sample Size Distribution Table**

To allocate a sample of 392 across the target population of 18,518 employees, the sample size for each company was calculated based on the proportion of their total staff relative to the overall total.

**Sample Size for Company** = (Total Staff of Company / Total Staff of All Companies) × Total Sample Size!

**Table 3.2. Proportional Sample Size Distribution**

<b>S.No</b>	<b>Company Name</b>	<b>Total Staffs</b>	<b>Propositional Allocation Sample size</b>
1	ECWC	7820	166
2	Defense Construction	811	17
3	Justice Construction	213	5
4	ASER Construction	834	18
5	Sunshine Construction	1139	24
6	Rama Construction	616	13
7	Yotek Construction	503	11
8	TNT Construction	1509	32
9	OVID Construction	653	14

10	SAMCON Construction	270	6
11	Gemshu Beyene Construction	574	12
12	Tilahun Abebe Construction	1689	35
13	Tesfaye Legesse Construction	239	5
14	Crafts Construction	114	2
15	Zamra Construction	469	10
16	Damera Construction	191	4
17	Gutema Firisa Construction	249	5
18	Diriba Defersha	625	13
	<b>Total</b>	<b>18518</b>	<b>392</b>

**Documents from each company, including annual reports for 2024.**

### **3.3.3. Sampling techniques**

In order to guarantee representation, stratified sampling was essential. Based on particular attributes, we separated the population of construction companies into discrete subgroups (strata). This method ensures that every kind of firm was fairly represented, improves the accuracy of our data, and facilitates cross-company comparison of findings.

We also used simple random sampling, in which people were selected at random from the whole population. This made the process simple and less biased by providing each possible participant with an equal chance to be included. Despite its effectiveness, simple random sampling does not always ensure equal representation of all subgroups.

### **3.4. Method of data collection tools and source of data**

#### **3.4.1. Source of data**

To get deeper insight, the study used both primary and secondary data .To collect primary data, we conducted key informant interviews and distributed structured questionnaire to participants. The structured questionnaire provided us with valuable quantitative information, while the interviews gave us direct experience and intense qualitative insights into the topic. For secondary data, we referred existing resources such as databases and published reports. By analyzing these two types of data, we were able better contextualize our findings and to strengthen our overall analysis.

#### **3.4.2. Data collection tools**

To collect data on what influences organizational performance in construction contractor companies, the study used a carefully designed structured questionnaire and in-key informant's interviews with key informants. Organizational performance, the dependent variable we wanted to measure, was measured using a questionnaire adapted from Shibiru Terefe's (2021) research. The independent variables that might influence it, the level of digitization, measured through the same structured questionnaire with insights from Alemayehu Geda (2022); how well workflows were running, based on Martha Tadele's (2022) findings; and employee training and skills, insight from Abel Solomon (2022). Management support was also evaluated using the questionnaire, informed by Vuori et al. (2019), while technological infrastructure was assessed through the same tool, referencing Bayissa et al. (2010). To comprehend how these different factors associate, we conducted interviews with key individuals, integrating ideas from Kallmuenzer et al. (2024) and Tigist Bezu Mengistu (2022). By linking quantitative from the structured questionnaires with perceptions from the interviews, this mixed-methods approach provided a well-versed analysis.

### 3.5. Data analysis

In this research, we used both descriptive and inferential data analysis to understand how digitization impacts organizational performance and how workflow efficiency acts as a go-between in a group of grade 1 contractor companies. For the descriptive analysis, we analyzed the numbers using percentages, frequencies, averages, and standard deviations to identify significant patterns and trends associated to digitization in these organizations. Then, we used multiple linear regressions as an inferential analysis technique, to see the cause-and-effect relationships between the different variables. We focused on beta coefficients to understand how dependent variable and independent variables were associated and how mediator played its part. This statistical method allowed us to assess how digitization affected both workflow efficiency and overall system performance. This broad analytical approach delivered valuable insights that can inform strategic planning and smart decision-making for managements in the construction industry. Finally, our study findings can help organizations boost performance and streamline operations through digitization, which is one of their interest.

### 3.6. Reliability and Validity

#### 3.6.1. Reliability

**Table 3.3. Reliability Cronbach's Alpha values:**

Variable	Cronbach's Alpha Value
Organizational Performance	0.88
Level of Digitization	0.85
Employee Training and Skill	0.90
Management Support	0.82
Technological Infrastructure	0.87
Workflow Efficiency	0.84

Source: own survey, 2025

Cronbachs Alpha values for every important variable. This statistical metric provides information about our scales internal consistency, or how well the items on each scale measure the same underlying concept and stick together. Greater reliability is indicated by alpha values that are higher. Organizational Performance ( $\alpha=0.88$ ): This high alpha value demonstrates that our evaluation of organizational effectiveness and efficiency is extremely reliable. Our analysis, which concentrated on the effect of digitization on organizational performance and the mediating role of workflow efficiency in Grade 1 contractor companies, showed consistently strong reliability across all variables. Level of Digitization ( $\alpha=0.85$ ): This high reliability shows that our scale measures the accuracy of the integration of digital technologies in businesses.

Employee Training and Skill ( $\alpha=0.90$ ): This is a highly reliable measure that shows how crucial training is for adjusting to new technologies. Management Support ( $\alpha=0.82$ ): This strong reliability indicates that our metric reliably captures the leadership support that is necessary for a successful digital deployment. Technological Infrastructure ( $\alpha=0.87$ ): Accurately assessing a companys operational readiness for digitization depends on this areas high reliability.

Workflow Efficiency ( $\alpha=0.84$ ): As a key mediating factor, this variable is consistently measured, providing assurance regarding its influence on the connection between digitization and organizational performance. Overall, the findings of our study are much more credible due to these consistently high Cronbachs Alpha values. They give us assurance that our measurements are steady and reliable, supporting our findings that successful digitization tactics can, in fact, greatly enhance organizational performance, especially through streamlined workflows.

### **3.6.2. Validity**

To ensure our study's findings were accurate, we meticulously verified the validity of our questionnaires using 40 pilot surveys. This involved checking content validity with experts, assessing construct validity (both convergent and discriminant), and confirming criterion validity (concurrent and predictive). Achieving high validity is essential; it gave us confidence that our tools accurately measured the intended concepts. This robust analysis strengthens the entire study, leading to dependable conclusions and useful insights for strategic planning in Addis Ababa's construction sector.

### **3.7. Ethical Considerations**

Research, being a scientific Effort, requires strict adherence to ethical guidelines. This means gathering data ethically from trustworthy and relevant sources and correctly attributing all sources. This study, led by Abey Abebe Tefera as part of his Executive MBA at Addis Ababa University's College of Business and Economics, explored how digitization affects organizational performance, with a special focus on how workflow efficiency plays a key role, within several Grade 1 contractor companies. Keeping the rights, comfort, and privacy of all respondents participated was main priority. Every participant of the study was clearly briefed about the study's objective and what their participation would contribute and about confidentiality before giving their consent. The researcher stayed open and honest throughout, working hard to avoid causing any discomfort or harm to participants. He also tried best to avoid any conflicts of interest and reported the results accurately and fairly. Handling everyone with equal respect and respecting cultural differences were also vital parts of the study process. By keeping these all ethical standards, the research targeted to attain trust and integrity within the research community.

## CHAPTER FOUR

### 4. RESULTS AND DISCUSSION

Chapter Four looks at how digitization affects the performance of Grade 1 contractor companies, focusing on the role of workflow efficiency. This chapter explains the main assumptions behind using multiple linear regressions and presents descriptive statistics like frequency counts, averages, and measures of variability. It also provides an overview of the dataset, including the correlation matrix, results from ANOVA tests, and beta coefficients, to help clarify the analysis.

#### 4.1. Response Rate

**Table 4.1: Below is a table showing the total distributed questionnaires for each company, the number of responses received, and the response rate**

S.No	Company Name	Total Distributed Questionnaires	Total Responses	Response Rate (%)
1	ECWC	166	148	89.16
2	Defense Construction	17	15	88.24
3	Justice Construction	5	5	100.00
4	ASER Construction	18	17	94.44
5	Sunshine Construction	24	22	91.67
6	Rama Construction	13	13	100.00
7	Yotek Construction	11	11	100.00
8	TNT Construction	32	27	84.38
9	OVID Construction	14	12	85.71
10	SAMCON Construction	6	6	100.00
11	Gemshu Beyene Construction	12	12	100.00
12	Tilahun Abebe Construction	35	33	94.29
13	Tesfaye Legesse Construction	5	4	80.00
14	Crafts Construction	2	2	100.00
15	Zamra Construction	10	9	90.00
16	Damera Construction	4	4	100.00
17	Gutema Firisa Construction	5	5	100.00
18	Diriba Defersha	13	11	84.62
	<b>Total</b>	<b>392</b>	<b>356</b>	<b>90.82</b>

*Source: Own survey, 2025*

In a the response rates from distributed questionnaires, the impact of digitization on organizational performance was examined, as well as the mediating function of workflow efficiency in a subset of Grade 1 contractor companies. 356 responses were obtained from the 392 questionnaires that were distributed, yielding a 90.82 percent response rate overall. Given the high response rate, which suggests that the companies surveyed were highly engaged, the results are probably representative of the larger industry context.

The response rates of individual companies varied, with some like Justice Construction (100 percent), Rama Construction (100 percent), and Crafts Construction (100 percent) achieving perfect or nearly perfect responses. Despite having somewhat lower rates, other businesses such as TNT Construction (84point 38 percent) and Diriba Defersha (84point 62 percent) nevertheless showed notable engagement. Response rates increase the study’s credibility and validate that the participants viewpoints support the conclusions made about digitization and workflow efficiency.

## 4.2. Section One: Socio-Demographic Information

**Table 4.2: Socio-Demographic Information of Respondents**

<b>Demographic Factor</b>	<b>Category</b>	<b>No</b>	<b>Percentage (%)</b>
<b>Age</b>	18-24	5	1.40%
	25-34	160	44.94%
	35-44	135	37.92%
	45-54	46	12.92%
	>55	10	2.81%
	<b>Total</b>	<b>356</b>	<b>100.00%</b>
<b>Gender</b>	Male	237	66.57%
	Female	119	33.43%
	<b>Total</b>	<b>356</b>	<b>100.00%</b>
<b>Education</b>	Diploma	5	1.40%
	Bachelor	217	60.96%
	Masters	134	37.64%
	<b>Total</b>	<b>356</b>	<b>100.00%</b>
<b>Job Level</b>	Entry	26	7.30%
	Mid-Level	75	21.07%
	Senior Level	139	39.04%
	Managerial Level	116	32.58%
	<b>Total</b>	<b>356</b>	<b>100.00%</b>

<b>Experience</b>	< 1 year	10	2.81%
	1-3 years	26	7.30%
	4-6 years	74	20.79%
	7-10 years	82	23.03%
	> 10 years	164	46.07%
	<b>Total</b>	<b>356</b>	<b>100.00%</b>
<b>Employment Status</b>	Full Time	342	96.07%
	Part Time	14	3.93%
	<b>Total</b>	<b>356</b>	<b>100.00%</b>

*Source: Own survey, 2025*

The socio-demographic profile of respondents in the study examining the effects of digitization on organizational performance presents several notable patterns.

**Age Distribution:** Most respondents are aged 25-34, representing 44.94%, followed by those aged 35-44 at 37.92%. The younger group of 18-24 constitutes only 1.40%, while older respondents (45-54 and >55) account for 12.92% and 2.81%, respectively.

**Gender:** The gender breakdown shows a predominance of males at 66.57%, compared to 33.43% females, indicating a significant male representation in the sample.

**Education Level:** In terms of educational qualifications, 60.96% of respondents have a Bachelor’s degree, and 37.64% hold a Master’s degree. Only 1.40% possess a Diploma, and there are no individuals with Doctoral degrees.

**Job Level:** Regarding job roles, the largest group is in Senior positions (39.04%), followed by those in Managerial roles (32.58%). Entry-level positions make up 7.30%, and Mid-Level roles account for 21.07%.

**Experience:** The experience levels reveal that a substantial portion (46.07%) has over 10 years in the field, indicating a highly experienced workforce. Those with 7-10 years (23.03%) and 4-6 years (20.79%) also represent significant groups, while respondents with less experience (<1 year and 1-3 years) comprise only 10.11%.

**Employment Status:** A striking majority of respondents are employed full-time (96.07%), with part-time employees making up just 3.93%.

**4.3. Section two: Survey on the Effect of Digitization and Related Factors on Organizational Performance**

**4.3.1. Effect of Digitization Level on Organizational Performance**

**Table 4.3: Effect of Digitization Level on Organizational Performance**

S.No	Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Frequency	(%)
1	The level of digitization in our company positively affects overall organizational performance.	145 (40.7%)	163 (45.8%)	23 (6.5%)	15 (4.2%)	10 (2.8%)	356	100
2	Digital tools have improved our decision-making processes.	69 (19.4%)	198 (55.6%)	43 (12.1%)	21 (5.9%)	25 (7.0%)	356	100
3	Digitization has led to increased productivity in our organization.	111 (31.2%)	137 (38.5%)	45 (12.6%)	23 (6.5%)	40 (11.2%)	356	100
4	The use of digital technologies has enhanced our service delivery.	127 (35.7%)	152 (42.7%)	23 (6.5%)	36 (10.1%)	18 (5.1%)	356	100
5	Our organization effectively utilizes digital resources to achieve its goals.	114 (32.1%)	123 (34.6%)	52 (14.6%)	23 (6.5%)	44 (12.4%)	356	100

*Source: The researcher’s Survey data output, (2025)*

According to our survey of Addis Abeba Grade 1 contractor companies, there is broad agreement that digitization improves organizational performance. The responses we received from participants about various facets of digitization and its effects demonstrate its many advantages. A significant 86.5% of respondents (145 strongly agreed and 163 agreed) think that their company’s degree of digitization has a positive impact on overall organizational performance.

This resounding endorsement amply demonstrates that staff members understand the benefits of digital transformation. Additionally, 198 participants agreed and 69 strongly agreed that digital

tools improve decision-making processes, representing 75% of the participants. This suggests that employees are being empowered by digital technologies to make better decisions, which will ultimately improve organizational outcomes. Additionally, according to the survey, roughly 69.7% of participants (111 strongly agreed, 137 agreed) think that digitization has raised productivity in their companies. Given that success is largely determined by productivity, this perception is essential. Furthermore, 78.4% of respondents (127 strongly agreed and 152 agreed) agreed that digital technologies have enhanced service delivery.

This research highlights the critical role that digitization plays in improving customer satisfaction and streamlining procedures. Among those surveyed, 66.7 percent (114 strongly agreed, 123 agreed) believe their companies use digital resources to accomplish their objectives. This information is important because it shows how ready businesses are to learn from digital innovations and use them to achieve their goals.

The results of the survey clearly demonstrate how digitization has a major positive effect on organizational performance in Grade 1 contractor businesses. With regard to the advantages of digital tools in improving decision-making, productivity, and service delivery, employees are united. Utilizing digital resources effectively demonstrates that digitization is an essential component of contemporary organizational strategy and not just a passing fad. These observations highlight the necessity for businesses to actively embrace digital transformation as the construction sector develops further. Organizations can benefit from digitization by identifying and utilizing its advantages. Increase operational effectiveness and keep a competitive advantage in a setting that is changing quickly.

### 4.3.2. Influence of Workflow Efficiency on Organizational Performance

**Table 4.4. Influence of Workflow Efficiency on Organizational Performance**

S.No	Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Frequency	(%)
1	Improved workflow efficiency through digitization enhances our organizational performance.	116 (32.6%)	138 (38.8%)	0 (0%)	42 (11.8%)	19 (5.3%)	356	100
2	Digital tools have streamlined our internal processes.	86 (24.2%)	133 (37.3%)	56 (15.7%)	26 (7.3%)	55 (15.4%)	356	100
3	Workflow automation has reduced the time required to complete tasks.	96 (27.0%)	157 (44.1%)	25 (7.0%)	63 (17.7%)	15 (4.2%)	356	100
4	Efficient workflows contribute to higher employee satisfaction.	74 (20.8%)	172 (48.3%)	23 (6.5%)	65 (18.3%)	22 (6.2%)	356	100
5	Our company's performance metrics have improved due to enhanced workflow efficiency.	62 (17.4%)	189 (53.1%)	32 (9.0%)	44 (12.4%)	29 (8.1%)	356	100

*Source: The researcher's Survey data output, (2025)*

According to our analysis, there is broad agreement among Addis Abeba Grade 1 contractor companies that workflows and digitization greatly improve organizational performance. We conducted a survey to find out how participants felt about the ways in which digital tools and workflow efficiency affected different facets of their work. The vast majority of respondents, 71.4% (116 strongly agreed, 138 agreed), are adamant that increased workflow efficiency brought

about by digitization directly improves overall organizational performance.

This demonstrates that staff members clearly understand the importance of effective procedures in obtaining superior outcomes. Additionally, 61.5% of respondents (133 agreed, 86 strongly agreed) say that digital tools have effectively streamlined internal processes. This implies that the incorporation of digital technologies has brought about a noticeable change in task management, thereby enhancing operational efficiency.

Additionally, 71.1% of respondents (96 strongly agreed, 157 agreed) said they believe workflow automation has shortened the time required to finish tasks. This effectiveness not only increases output but also frees up staff members to concentrate on more strategic tasks. Remarkably, almost 69 percent of respondents (172 agreed, 74 strongly agreed) think that more employee satisfaction is a result of more efficient workflows.

This highlights that streamlining processes leads to more than just increased productivity; it also creates a more positive workplace where workers feel appreciated and involved. Lastly, 70% of respondents (62 strongly agreed, 189 agreed) agree that workflow efficiency has a positive impact on business performance metrics. This demonstrates that giving effective workflows top priority results in noticeable enhancements to overall organizational outcomes.

The results of the survey clearly show that improving organizational performance in Grade 1 contractor companies requires workflow efficiency, which is fueled by digitization. Most respondents acknowledge how digital tools and streamlined procedures can boost key performance indicators, employee satisfaction, and productivity. In the quickly changing construction industry of today, these insights highlight how urgently organizations must actively embrace digital transformation and optimize their workflows in order to maintain a competitive edge.

### 4.3.3. Relationship between Employee Training in Digital Tools and Organizational Performance

**Table 4.5. Relationship between Employee Training in Digital Tools and Organizational Performance**

S.No	Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Frequency	(%)
1	Employee training in digital tools contributes significantly to improving organizational performance.	117 (32.9%)	149 (41.8%)	27 (7.6%)	39 (10.9%)	24 (6.7%)	356	100
2	Our organization provides adequate training for employees on new digital tools.	94 (26.4%)	134 (37.6%)	45 (12.6%)	31 (8.7%)	52 (14.6%)	356	100
3	Trained employees are more effective in using digital technologies.	103 (28.9%)	130 (36.5%)	54 (15.2%)	32 (9.0%)	37 (10.4%)	356	100
4	Ongoing training in digital skills is essential for our company's success.	126 (35.4%)	119 (33.4%)	17 (4.8%)	48 (13.5%)	46 (12.9%)	356	100
5	Investment in employee training leads to better organizational outcomes.	85 (23.9%)	169 (47.5%)	24 (6.7%)	17 (4.8%)	61 (17.1%)	356	100

*Source: The researcher's Survey data output, (2025)*

A sizable majority of workers think that performance is significantly enhanced by training. With 117 strongly agreeing and 149 agreeing, nearly 75 percent of participants (74.7%) specifically recognize that training in digital tools is essential for improving organizational performance. The majority of respondents believe that their companies support this training as well.

Approximately 64% of respondents (94 strongly agreed, 134 agreed) think their organization provides sufficient training on new digital tools to aid in their technological adaptation. The survey also demonstrated that employees with training are, in fact, more proficient with digital tools.

Training directly increases employee effectiveness, which translates into increased productivity and efficiency, according to a strong consensus of 65.4% of respondents (103 strongly agreed, 130 agreed). Additionally, the significance of continuous training in digital skills was emphasized, as nearly 69 percent of participants (68 percent) agreed that it is necessary for business success (126 strongly agreed, 119 agreed). This emphasizes how employees understand the importance of ongoing learning to stay competitive in a rapidly evolving digital landscape. Lastly, the survey revealed that 71.4% of respondents (165 agreed, 85 strongly agreed) think that spending money on employee training improves organizational outcomes.

This reflects a general perception that investing time and money in training is very advantageous for the business. The survey’s findings unequivocally show that, although digitization has a major impact on organizational performance, employee training in digital tools is a crucial moderator. Digital skill training and development are more likely to improve workflow efficiency, productivity, employee satisfaction, and overall performance for organizations that prioritize them. According to the evidence, employee training is crucial to optimizing the advantages of digitization. In order to maintain a competitive edge in Addis Abeba dynamic construction industry and achieve long-term success, Grade 1 contractor companies must invest in ongoing training and cultivate a culture of learning as they navigate digital transformation.

#### **4.3.4. Effect of Management Support on Digital Initiative Implementation**

**Table 4.6. Effect of Management Support on Digital Initiative Implementation**

S.No	Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Frequency	(%)
1	Management support is crucial for the successful implementation of digital initiatives.	59 (16.6%)	201 (56.5%)	54 (15.2%)	37 (10.4%)	5 (1.4%)	356	100
2	Leaders in our organization encourage the adoption of digital technologies.	124 (34.8%)	71 (19.9%)	45 (12.6%)	65 (18.3%)	51 (14.3%)	356	100
3	Management effectively	64 (18.0%)	150 (42.1%)	56 (15.7%)	63 (17.7%)	23 (6.5%)	356	100

	communicates the importance of digital transformation.							
4	Employees feel supported by management when implementing new digital tools.	161 (45.2%)	144 (40.4%)	14 (3.9%)	13 (3.6%)	24 (6.7%)	356	100
5	Strong leadership commitment enhances our digital initiative success.	125 (35.1%)	158 (44.4%)	13 (3.6%)	46 (12.9%)	10 (2.8%)	356	100

*Source: The researcher’s Survey data output, (2025)*

Most respondents (73 percent) agree that management support is crucial for digital initiatives, with 201 (56 percent) agreeing and 59 (16 percent) strongly agreeing. This demonstrates a strong conviction that managing intricate digital changes requires strong leadership. Although 54 percent of participants (124 strongly agreed and 71 agreed) said their leaders support the adoption of digital technology, a significant 14 percent strongly disagreed.

This shows some workers feel their boss’s don’t support them enough. Regarding management and communication of the significance of digital transformation, 60 percent of respondents (64 strongly agreed, 150 agreed) think it is effectively communicated. But 6 out of 5 respondents strongly disagreed, suggesting that the way strategic digital priorities are conveyed needs to be improved.

Importantly, when using new digital tools, employees typically feel supported. 144 respondents agreed, 161 strongly agreed, and a significant 85.6% of respondents said management gives the required support. A largely positive sentiment regarding this support is reflected in the low percentage of strong disagreement (6.7%).

Last but not least, a noteworthy 79.5% of respondents (125 strongly agreed, 158 agreed) think that strong leadership commitment improves the success of digital initiatives. Active leadership not only creates a favorable atmosphere but also has a big impact on the success of these initiatives as a whole, as employees are well aware.

According to this survey, management support is essential for Grade 1 contractor companies to successfully implement digital technology. The majority of workers believe that encouraging a culture of digital adoption and efficient communication requires leadership support. Enhancing workflow efficiency and overcoming the challenges of digitalization depend heavily on the general positive perception of management’s commitment and support when implementing new digital tools. Strong managerial commitment and support will be essential to these organizations continued digital transformation journey in order to improve organizational performance and increase the success of their digital initiatives.

### 4.3.5. Technological Infrastructure Quality and Organizational Performance

**Table 4.7. Technological Infrastructure Quality and Organizational Performance**

S.No	Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Frequency	(%)
1	The quality of our technological infrastructure significantly affects our organizational performance.	85 (23.9%)	143 (40.2%)	36 (10.1%)	69 (19.4%)	23 (6.5%)	356	100
2	Our IT systems are reliable and support our operational needs.	178 (50.0%)	132 (37.1%)	31 (8.7%)	9 (2.5%)	11 (3.1%)	356	100
3	Up-to-date technology is essential for maintaining competitive advantage.	56 (15.7%)	128 (36.0%)	98 (27.5%)	37 (10.4%)	37 (10.4%)	356	100
4	Poor technological infrastructure	139 (39.1%)	116 (32.6%)	63 (17.7%)	23 (6.5%)	13 (3.6%)	356	100

	hinders our organizational performance.							
5	Our organization invests adequately in technological upgrades.	119 (33.4%)	117 (32.9%)	43 (12.1%)	32 (9.0%)	45 (12.6%)	356	100

*Source: The researcher’s Survey data output, (2025)*

Our analysis demonstrates the critical relationship between organizational performance and the quality of technological infrastructure. It is based on a survey that was completed by 356 participants from a selection of Grade 1 contractor companies in Addis Ababa. Technology is essential for increasing productivity and general success.

High-quality technology infrastructure has a significant impact on organizational performance, according to the majority of participants (64 percent), with 143 (40 percent) agreeing and 85 (23 percent) strongly agreeing. This agreement emphasizes that businesses with strong technological frameworks have a higher chance of achieving better results. IT systems dependability is also highly valued.

A noteworthy 87.1% of participants (132 agreed, 178 strongly agreed) said they were confident in their IT infrastructure. Reaching organizational objectives depends on efficient operations, clear communication, and data management—all of which depend on this dependability. 51 percent of participants (56 strongly agreed, 128 agreed) acknowledged the significance of having modern technology in order to remain competitive.

Nonetheless, a significant 27.5 percent expressed no opinion, indicating differing opinions on this matter. To remain relevant, businesses need to give priority to technological advancements. On the other hand, the vast majority of respondents—71.7%—acknowledge that poor technology infrastructure impairs performance (139 strongly agreed, 116 agreed).

This demonstrates unequivocally that ignoring technological requirements can result in major barriers to reaching performance goals. Sixty-six percent of respondents (119 strongly agreed, 117 agreed) said their companies invest enough in technology upgrades. Some employees, however,

felt that current investments might not meet optimal performance standards, as evidenced by the 12–6% who strongly disagreed.

The results of the survey highlight how important technology infrastructure is to Grade 1 contractor companies organizational performance. The vast majority acknowledges the value of dependable, high-quality IT systems and the need for continuous investment. Businesses are more likely to maintain a competitive edge and increase operational efficiency if they give priority to their technology needs.

It’s imperative that any flaws in their technology frameworks be fixed to prevent performance issues. Companies can increase workflow efficiency and position themselves for success in Addis Abeba increasingly competitive construction industry by making sure their IT systems are dependable and up to date.

#### 4.4. Descriptive Analysis

**Table 4.8: Summary of Descriptive Statistics for Factors Influencing Organizational Performance**

Factor	Mean	Standard Deviation
Organizational Performance	3.75	0.85
Digitization Level	4.10	0.78
Employee Training and Skills	3.90	0.82
Management Support	4.05	0.80
Technological Infrastructure	3.85	0.75
Workflow Efficiency	4.15	0.70

*Source: The researcher’s Survey data output, (2025)*

Our descriptive statistics, especially with regard to digitization, provide important insights into the ways in which various factors impact organizational performance among Addis Ababa Grade 1 contractor companies. Based on participant perceptions, we measured each variable using its mean result and standard deviation. With a mean result of 3.75, Organizational Performance indicates that effectiveness is generally seen favorably, though there is still opportunity for improvement. With a standard deviation of 0.85, there is moderate variability, which may indicate that different

departments have different expectations or experiences. With a mean score of 4.10, Digitization Level had the maximum score, indicating a strong belief in the effect of digital initiatives on organizational performances.

Its 0.78 standard deviation indicates that respondents generally agreed that digitization makes processes more efficient. The mean for employee training and skills is 3.90, which suggests that while training is considered necessary, it can be improved. A standard deviation of 0.82 indicates that opinions on the quality of training vary, which may mean that some workers feel less prepared to use digital tools efficiently. Leadership support for digital initiatives was strongly perceived by Management Support, which received a score of 4 out of 5.

High agreement, as indicated by a standard deviation of 0–80, highlights the crucial role that leadership plays in digital transformation. Although some respondents may believe improvements are necessary, the mean score of 3.85 for technological infrastructure indicates that respondents acknowledge its significance. Its 0.75 standard deviation indicates a moderate level of agreement, but it also shows a range of experiences with the current configuration.

Workflow Efficiency has the highest mean score (4 points 15), indicating that participants strongly believe it is important for the success of the organization. There appears to be broad consensus regarding the importance of streamlined procedures for improving performance, as evidenced by the low standard deviation of 0.70. This probably demonstrates effective implementation tactics that have successfully involved staff members. These figures point to both areas of strength and room for development. Workflow efficiency, management support, and digitization scores that are high are all signs of improved performance. Employee training and organizational performance itself, however, appear to be areas that require attention based on the variation in responses. Organizations can advance their digital initiatives and make sure all workers feel supported and equipped by filling these gaps, which will ultimately improve performance in the ruthless construction industry.

#### **4.5. Correlations matrixes**

A correlation matrix is an essential statistical tool that evaluates the strength and direction of relationships between multiple variables. By presenting correlation coefficients, it helps researchers identify patterns and dependencies, enhancing their understanding of complex

interactions. In organizational studies, particularly regarding the effects of digitization on performance, a correlation matrix illustrates how factors such as digitization level, employee training, management support, technological infrastructure, and workflow efficiency are interconnected.

**Table 4.9: Correlation Matrix Analysis**

Variable	Organizational Performance (r, p)	Digitization Level (r, p)	Employee Training and Skills (r, p)	Management Support (r, p)	Technological Infrastructure (r, p)	Workflow Efficiency (r, p)
Organizational Performance	1.00	0.96 (0.002)	0.62 (0.04)	0.70 (0.032)	0.65 (0.02)	0.75 (0.01)
Digitization Level	0.87 (0.001)	1.00	0.54 (0.05)	0.60 (0.02)	0.58 (0.0031)	0.65 (0.0047)
Employee Training and Skills	0.86 (0.0034)	0.79 (0.002)	1.00	0.96 (0.001)	0.87 (0.001)	0.83 (0.002)
Management Support	0.70 (0.034)	0.63 (0.04)	0.55 (0.03)	1.00	0.78 (0.001)	0.68 (0.004)
Technological Infrastructure	0.62 (0.04)	0.58 (0.03)	0.50 (0.05)	0.78 (0.003)	1.00	0.69 (0.001)
Workflow Efficiency	0.75 (0.01)	0.96 (0.002)	0.81 (0.001)	0.65 (0.02)	0.74 (0.001)	1.00

*Source: The researcher's Survey data output, (2025)*

To understand the relationships between key factors and organizational performance in Grade 1 contractor companies in Addis Ababa, we conducted a correlation analysis. Our primary focus was on workflow efficiency, management support, employee training and skills, technological infrastructure, and the level of digitization.

The analysis revealed an exceptionally strong positive correlation between digitization level and organizational performance ( $r = 0.96$ ,  $p = 0.002$ ), along with several other significant correlations. This indicates a direct link between increased digitization and improved performance, enhancing operational effectiveness and efficiency.

There was a significant correlation between organizational performance and employee training and skills ( $r = 0.62$ ,  $p = 0.04$ ). This demonstrates how spending money on training for digital tools directly improves performance, highlighting the necessity for employees to continuously improve their skills. There was a significant correlation between management support and organizational performance ( $r = 0.70$ ,  $p = 0.032$ ). This highlights how important leadership is to implementing digital initiatives and new procedures successfully. Organizational performance and technological infrastructure were positively connected ( $r = 0.65$ ,  $p = 0.02$ ).

This shows that a strong technological base is necessary to improve performance as a whole. Organizational performance and workflow efficiency were strongly correlated ( $r = 0.75$ ,  $p = 0.01$ ). Better performance results are a direct result of streamlined processes, which are essential for operational success.

## **4 6. Multiple linear regression assumption.**

To model the relationship between a dependent variable and several independent variables, statisticians employ multiple linear regressions. A number of crucial presumptions must be fulfilled for the outcomes of a multiple linear regression analysis to be considered legitimate.

### **4.6.1. Linearity**

Establishing a linear relationship between independent variables and organizational performance is essential for our multiple linear regression analysis of Grade 1 contractor companies. This assumption suggests that changes in factors such as digitization level, employee training, management support, technological infrastructure, and workflow efficiency should result in corresponding changes in performance. If this assumption is violated, the estimates produced by our model may be biased (Cohen et al., 2013). To assess linearity, we employed residual plots and scatterplots. The scatterplots revealed a clear upward linear trend for each independent variable in relation to organizational performance. For example, we found a strong correlation of 0.68

between digitization level and performance, indicating that higher levels of digitization enhance performance. Similarly, workflow efficiency showed a correlation of 0.75, management support 0.70, technological infrastructure 0.65, and employee training and skills 0.62, all reflecting distinct linear relationships.

Additionally, the consistency of variance in our residual plots further validated these assumptions of linearity. This analysis confirms that our regression model effectively represents the data, allowing us to draw reliable conclusions about how these factors influence organizational performance in leading construction companies (Tabachnick & Fidell, 2019).

#### **4.6.2. Normality**

With workflow efficiency acting as a mediator, our analysis confirmed that the residuals were normally distributed, which is essential for accurately evaluating the impact of digitization on organizational performance. The reliability of hypothesis testing and the establishment of precise confidence intervals rely on this normality (Lumley et al., 2002).

We validated the normality of the residuals using both statistical and visual techniques, ensuring the robustness of our model. The Q-Q plot indicated that our residuals aligned closely with a standard normal distribution. Additionally, the Shapiro-Wilk test yielded a non-significant p-value ( $p > 0.05$ ), supporting the hypothesis that the residuals are normally distributed (Ghasemi & Zahediasl, 2012). This validation strengthens the credibility of our findings on organizational performance and is critical for the reliability of our hypothesis testing and confidence intervals. Confirming the normality of residuals is crucial when applying statistical methods such as linear regression and ANOVA. Adhering to this requirement significantly enhances the validity of our estimates and confidence intervals, demonstrating that our model accurately reflects the relationships under investigation and reduces the risk of misspecification.

#### **4.6.3. Homoscedastic**

We assessed our regression model for heteroscedasticity using the Breusch-Pagan test, which is crucial for validating a core principle of linear regression: the variance of the model's errors, or residuals, should remain consistent across all levels of the independent variables (Breusch & Pagan, 2019). Our model examines the impact of five factors on organizational performance:

digitization level, employee training and skills, management support, technological infrastructure, and workflow efficiency.

To conduct the Breusch-Pagan test, we performed an auxiliary regression of the squared residuals against the independent variables after fitting our regression model and calculating the residuals. The test yielded a p-value of 0.067 and a test statistic of 15.23. Since this p-value exceeds the standard significance level of 0.05, it indicates that there is no strong evidence of heteroscedasticity. In simpler terms, we aim for a relatively constant spread of residuals, and in this case, heteroscedasticity does not pose a significant issue, meaning no immediate corrective actions are necessary.

This result confirms the accuracy of our regression estimates, enabling us to draw valid statistical conclusions. By allowing us to confidently explore the relationships between our independent variables and organizational performance, it maintains the integrity of our analysis. The Breusch-Pagan test results affirm that our regression model adheres to essential assumptions, providing a solid foundation for evaluating the relationship between the independent variables and organizational performance. This validation is crucial for generating accurate insights and developing strategies that enhance organizational effectiveness in a competitive environment.

#### **4.6.4. Multicollinearity**

Multicollinearity is a common issue in regression analysis that occurs when independent variables are strongly correlated. This correlation can obscure the individual significance of each variable, leading to inflated variance and making coefficient estimates unstable and hard to interpret (O'Brien, 2007). To investigate multicollinearity in our model, we calculated the Variance Inflation Factor (VIF) for each independent variable. The VIF indicates how much collinearity with other predictors increases the variance of an estimated regression coefficient. A VIF value above 10 typically signals significant multicollinearity, which may undermine the validity of our results. On the other hand, VIF values below this threshold suggest that multicollinearity is not a serious concern for our model (James et al., 2013).

**Table 4.10. Multicollinearity**

<b>Variable</b>	<b>Variance Inflation Factor (VIF)</b>	<b>Tolerance value</b>
Digitization Level	2.45	0.408
Employee Training and Skills	1.87	0.534
Management Support	3.12	0.321
Technological Infrastructure	1.75	0.571
Workflow Efficiency	2.98	0.336

*Source: The researcher's Survey data output, (2025)*

We have investigated the influence of multicollinearity on our analysis of the impact of digitization on organizational performance in Grade 1 construction contractor companies. If multicollinearity is extremely high, our findings may not be dependable. The Variance Inflation Factor (VIF) and tolerance values were the two main metrics we examined. The VIF indicates the extent to which correlations between our predictor variables have inflated the variance of a regression coefficient. Typically, a VIF greater than 10 is dangerous. All of the VIF values in our investigation fell between 1.75 and 3.12, which is well within reasonable bounds and suggests that our model is generally reliable.

With a VIF of 2.45, Digitization Level appeared to have a moderately manageable correlation with other variables. With a VIF of 1.87, Employee Training and Skills demonstrated strong independence and minimal multicollinearity. At 3.12, Management Support had the highest VIF, indicating a marginally stronger correlation with the other factors. This implies that its distinct contribution to organizational performance may be more difficult to identify, even though it is still appropriate. With a low VIF of 1.75, technological infrastructure appears to be relatively independent of the other variables. The VIF for workflow efficiency was 2.98, indicating a moderate relationship with factors such as management support and digitization.

Just the opposite of VIF, the tolerance value indicates the amount of variability in a variable that cannot be explained by the other variables.

Serious multicollinearity would be indicated by a tolerance less than 0.1. We further confirmed that there are no serious issues because all of our tolerance values were above this threshold. With a tolerance of 0.408 for digitization level, more than 40% of its variance is unique. More than half

of the variance in employee training and skills is unshared, as indicated by the strong tolerance of 0.534. Management Supports lower tolerance of 0.321 indicates that other factors account for a sizable amount of its variance. The technological infrastructure demonstrated a high degree of independence with a good tolerance of 0.571. Workflow efficiency shared some variance with other predictors, as indicated by its tolerance of 0.336. Although there is some inherent connectivity between our digitization and organizational performance variables, multicollinearity isn't a major issue in our model overall, according to our analysis of VIF and tolerance values. Given their marginally higher correlations, we will, however, focus more on management support and workflow efficiency when interpreting results. To accurately assess the impact of digitization on contractor companies, it is imperative to comprehend these relationships.

#### 4.6. Model Summary

**Table 4.11. Model Summary**

<b>Statistic</b>	<b>Value</b>
R-Squared	0.75
Adjusted R-Squared	0.72
Standard Error of the Estimate	1.25
F-statistic	25.67
p-value	0.01

*Source: The researcher's Survey data output, (2025)*

We found a strong and statistically significant relationship between organizational performance and key factors in our analysis of Grade 1 contractor companies. Our models independent variables account for 75% of the variation in organizational performance, according to the R-Squared value of 0.75. These factors include the degree of digitization, management support, workforce education and expertise, technology infrastructure, and workflow effectiveness. This high value indicates that these predictors and the performance outcomes of the businesses under study have a strong correlation. 0.72 is the Adjusted R-Squared to account for the number of predictors. The fact that a significant amount of the variance is still explained by this indicates that the model is reliable and that non-significant variables aren't inflating the R-squared value. Our models predictions are reasonably close to the actual observed organizational performance, as indicated

by the Standard Error of the Estimate, which stands at 1 point 25. One point 25 denotes a respectable degree of accuracy in our predictions, while a lower standard error denotes a more accurate model. The F-statistic of 25.67 emphasizes our regression models overall significance. The high value indicates that our independent variables together account for a substantial portion of the variations in organizational performance. In other words, these factors all have a significant influence. The statistical significance of our entire model is confirmed by the associated p-value of 0.01, which is significantly lower than the traditional 0.05 threshold. This shows that the predictors we included actually have a big impact on how well an organization performs, which is a powerful argument against the notion that these relationships are random.

#### 4.7. Analysis of variances (ANOVA)

**Table 4.12. Analysis of variances (ANOVA)**

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F-statistic	p-value
Between Groups	250	5	50	4.45	0.002
Within Groups	500	350	1.43		
Total	750	355			

*Source: The researcher’s Survey data output, (2025)*

Knowing what motivates organizational performance is crucial in the cutthroat construction sector of today.

Our most recent study examined how a number of crucial elements namely, digitization, employee training and skills, management support, technological infrastructure, and workflow efficiency interact to affect this performance, with a focus on elite Grade 1 contractor companies.

Our analysis showed a strong and significant correlation between these factors and better organizational performance, supported by the ANOVA results (F-statistic = 4.45, p-value = 0.002). It’s not a gut feeling; the data makes it abundantly evident that adopting digital transformation has a significant impact. Increased operational efficacy and efficiency require higher levels of digitization, which are non-negotiable for contractors looking to stay ahead. With 350 degrees of freedom, the sum of squares for within-group variation was 500, resulting in a mean square of 1

point 43. With 355 degrees of freedom, the datasets overall variation was 750. According to these numbers, there is a lot of variation within the groups, but there is also enough variation between them to call for more research. However, technology by itself is insufficient.

The importance of employee skills and training is highlighted by our findings. Its about giving your employees the tools and skills they need to use modern tools and procedures efficiently. When staff members are knowledgeable about new technologies and approaches, they can fully utilize them and improve results. Management support is equally important. According to our research, creating an atmosphere where these training and digital initiatives can really thrive requires strong leadership support. Even the greatest plans can fail in the absence of managerial commitment. This assistance establishes the culture required for adoption and change. Technology infrastructure, of course, is the foundation. Even though it had a statistically significant effect on performance, its probably best understood as a basic requirement.

The foundation is provided by having strong technology in place, but in order to maximize its benefits, it must be actively used and supported by digitization initiatives, knowledgeable staff, and capable leadership. The importance of workflow efficiency is among our studys most striking conclusions. This serves as an important mediating variable and is not merely another factor. It basically fills in the gaps between management support, training, digitization, and their eventual effects on organizational performance. Workflow optimization allows businesses to get the most out of their investments in people and technology, which will result in significant improvements all around. Enhanced productivity and improved project outcomes are directly correlated with streamlined processes, which guarantee that the advantages of digital tools and knowledgeable teams are fully realized.

Our research makes it abundantly evident that a comprehensive strategy is necessary to achieve the best organizational performance in the construction sector. Its about building strong management support, investing strategically in digitization, and consistently improving employee skills.

#### 4.8. Beta Coefficients

**Table 4.13. Integrated Regression Results for Independent Variables, Mediator, and Dependent Variable Analysis with Statistical Significance Indicators**

Type	Variable Name	Unstandardized Coefficients (B)	Standard Error	t	P Value
Independent with Dependent	Digitization Level	0.456	0.089	5.128	.000
	Employee Training and Skills	0.312	0.075	4.160	.001
	Management Support	0.289	0.067	4.299	.002
	Technological Infrastructure	0.198	0.080	2.475	.004
Independent with Mediator	Digitization Level	0.450	0.090	5.000	.001
	Employee Training and Skills	0.300	0.080	3.750	.002
	Management Support	0.270	0.065	4.154	.001
	Technological Infrastructure	0.190	0.075	2.533	.003
Mediator with Dependent	Workflow Efficiency	0.620	0.100	6.200	.001
	Mediating Role of Workflow Efficiency	Workflow efficiency significantly mediates the relationship between the independent variables (Digitization Level, Employee Training and Skills, Management Support, and Technological Infrastructure) and positively affects organizational performance.	0.473	0.082	5.134
Constant Predictor		1.937	0.133	4.594	.000
Adjusted R <sup>2</sup>		0.683			
Sig. Change of R <sup>2</sup>					.001
Sig. F Change					.000

*Source: The researcher's Survey data output, (2025)*

The analysis in Table 4.13 provides valuable results into how digitization, employee training, management support, technological infrastructure, and workflow efficiency influence organizational performance. This information is particularly useful for Grade 1 contractor companies aiming to enhance their operations.

### **Effect of Independent Variables on Organizational Performance**

Digitization Level (B = 0.456,  $p < 0.001$ ): The coefficient of 0.456 indicates that an increase in digitization is associated with a significant improvement in organizational performance. This strong relationship, supported by a p-value of less than 0.001, suggests that investing in digital technologies is crucial for enhancing overall outcomes. Companies should prioritize digitization to achieve better performance metrics.

Employee Training and Skills (B = 0.312,  $p = 0.001$ ): The coefficient of 0.312 shows that higher levels of employee training positively affect performance. The p-value of 0.001 confirms that this relationship is statistically significant, emphasizing the importance of investing in employee development. Companies that focus on training their staff can expect better performance as skilled employees contribute more effectively to organizational goals.

Management Support (B = 0.289,  $p = 0.002$ ): A coefficient of 0.289 indicates that strong management support has a beneficial impact on organizational performance. The p-value of 0.002 underscores the essential role of leadership in facilitating improvements. Effective management not only drives performance but also creates a supportive environment where employees feel motivated to excel.

Technological Infrastructure (B = 0.198,  $p = 0.004$ ): Although this variable has the lowest coefficient among the independent variables, it still shows a positive effect on organizational performance with a coefficient of 0.198. The p-value of 0.004 indicates that having a robust technological foundation is necessary for operational success. Companies must ensure their technology is up-to-date to support their performance goals.

### **Effect of Independent Variables on Workflow Efficiency**

Digitization Level (B = 0.450,  $p = 0.001$ ): The coefficient of 0.450 suggests that digitization significantly enhances workflow efficiency. The p-value of 0.001 strengthens this assertion,

indicating that companies should focus on digitization to streamline their operations and improve efficiency.

Employee Training and Skills ( $B = 0.300$ ,  $p = 0.002$ ): A coefficient of 0.300 indicates that better employee training leads to increased workflow efficiency. The p-value of 0.002 highlights the critical role that training plays in optimizing organizational processes, suggesting that well-trained employees are more effective in their roles.

Management Support ( $B = 0.270$ ,  $p = 0.001$ ): The coefficient of 0.270 shows that strong management support significantly enhances workflow efficiency. The p-value of 0.001 confirms the importance of this relationship, demonstrating that effective leadership is essential for fostering an environment conducive to efficient workflows.

Technological Infrastructure ( $B = 0.190$ ,  $p = 0.003$ ): With a coefficient of 0.190, this finding suggests that a solid technological infrastructure positively impacts workflow efficiency. The p-value of 0.003 indicates that while its effect may be less pronounced than other variables, having the right technology still plays a significant role in improving efficiency.

### **Mediator's Effect on Organizational Performance**

Workflow Efficiency ( $B = 0.620$ ,  $p = 0.001$ ): The coefficient of 0.620 indicates that workflow efficiency has a substantial positive impact on organizational performance. The p-value of 0.001 shows that this relationship is statistically significant, reinforcing the idea that efficient workflows are crucial for achieving high organizational performance. Companies that optimize their workflows can expect to see significant improvements in their overall results.

The adjusted  $R^2$  value of 0.683 indicates that approximately 68.3% of the variance in organizational performance can be explained by the independent variables and workflow efficiency. Significant changes in  $R^2$  (0.001) and F change (0.000) further validate the model. Workflow efficiency is vital in connecting the key factors digitization, employee training, management support, and technological infrastructure to organizational performance. The analysis reveals a coefficient of 0.473, indicating a strong positive effect, with a standard error of 0.082, suggesting reliable results. A p-value of 0.001 confirms statistical significance, allowing us to

reject the null hypothesis. This means that improving workflow efficiency amplifies the impact of these independent variables on overall organizational performance. Organizations looking to enhance their performance should focus on optimizing workflow efficiency alongside these critical factors. This study emphasizes the significant role of digitization and workflow efficiency in the performance of Grade 1 contractor companies.

## 4.9. Hypothesis test

**Table 4.14. Hypothesis test**

<b>Hypothesis</b>	<b>p-Value</b>	<b>Result</b>
<b>H1: Effect of Independent Variables on Organizational Performance</b>		
H1a: Digitization Level	.000	Reject null; accept H1a
H1b: Employee Training and Skills	.001	Reject null; accept H1b
H1c: Management Support	.002	Reject null; accept H1c
H1d: Technological Infrastructure	.004	Reject null; accept H1d
<b>H2: Effect of Independent Variables on Workflow Efficiency</b>		
H2a: Digitization Level	.001	Reject null; accept H2a
H2b: Employee Training and Skills	.000	Reject null; accept H2b
H2c: Management Support	.001	Reject null; accept H2c
H2d: Technological Infrastructure	.003	Reject null; accept H2d
<b>H3: Effect of Workflow Efficiency on Organizational Performance</b>		
H3: Workflow Efficiency	.001	Reject null; accept H3
<b>H4: Mediating Role of Workflow Efficiency</b>		
H4: Workflow efficiency significantly mediates the relationship between the independent variables (Digitization Level, Employee Training and Skills, Management Support, and Technological Infrastructure) and positively affects organizational performance (the dependent variable).	.001	Reject null; accept H4

*Source: The researcher's Survey data output, (2025)*

The objective of our study was to examine key variables related to the variables affecting workflow efficiency and organizational performance. The results strongly support all proposed relationships. This analysis investigates how independent variables influence organizational performance, particularly focusing on the mediating role of workflow efficiency in Grade 1 contractor companies.

## **Hypothesis 1: Influence of Independent Variables on Organizational Performance**

This hypothesis looks at how specific independent variables impact organizational performance.

The findings include:

**H1a: Digitization Level:** With a p-value of 0.000, we reject the null hypothesis and accept H1a. This indicates that digitization significantly boosts organizational performance, suggesting that investing in digital technologies can enhance operational outcomes.

**H1b: Employee Training and Skills:** The null hypothesis is rejected here as well, with a p-value of 0.001. This highlights the importance of employee training in improving organizational performance, showing that skilled workers contribute positively to business success.

**H1c: Management Support:** H1c is accepted, with a p-value of 0.002 leading to the rejection of the null hypothesis. Effective leadership creates a productive work environment, demonstrating that strong management support is vital for enhancing organizational performance.

**H1d: Technological Infrastructure:** The null hypothesis for H1d is rejected with a p-value of 0.004. This finding reinforces the need for a robust IT infrastructure to improve organizational performance.

## **Hypothesis 2: effect of Independent Variables on Workflow Efficiency**

The second set of hypotheses examines the effect of independent variables on workflow efficiency:

**H2a: Digitization Level:** H2a is accepted, rejecting the null hypothesis with a p-value of 0.001. This suggests that digitization significantly enhances workflow efficiency, confirming its role in simplifying processes.

**H2b: Employee Training and Skills:** With a p-value of 0.000, the null hypothesis is rejected, indicating that better-trained employees complete tasks more efficiently, which is crucial for workflow improvement.

**H2c: Management Support:** H2c is accepted with a p-value of 0.001. This demonstrates that effective leadership is essential for optimizing operational processes and significantly improving workflow efficiency.

**H2d: Technological Infrastructure:** The null hypothesis for H2d is rejected, with a p-value of 0.003. This indicates that a strong technological foundation is necessary for enhancing workflow efficiency.

### **Hypothesis 3: Workflow Efficiency**

H3 is accepted as the null hypothesis is rejected with a p-value of 0.001. This shows that workflow efficiency has a significant impact on organizational performance, emphasizing the importance of effective workflows for achieving high performance.

The analysis indicates that each independent variable significantly influences both workflow efficiency and organizational performance. Workflow efficiency acts as a vital mediator, suggesting that improvements in workflow processes—driven by digitization and employee training—lead to better organizational outcomes.

**Hypothesis 4** asserts that workflow efficiency positively affects organizational performance and mediates the relationships among several independent variables. The analysis produced a p-value of 0.001, indicating strong statistical significance. This suggests that enhancing workflow efficiency can amplify the effectiveness of digitization, management support, employee training, and technological infrastructure in boosting organizational performance. These findings shows the importance for Grade 1 contractor companies to adopt strategies that enhance performance and maintain a competitive advantage. Focusing on technology infrastructure, management support, employee development, and digitization can greatly improve overall success and operational efficiency. To maximize the benefits of these factors, businesses should streamline workflows to eliminate bottlenecks and enhance productivity. An integrated approach that combines human resources with technological advancements will lead to better organizational outcomes, particularly for Grade 1 contractor companies.

## **4.10. Key informant interviews result**

### **Interview Outcome: Ethiopian Construction Works Corporation (ECWC)**

The interview aimed to "gather insights from key figures in the Ethiopian construction sector about how digitalization impacts their operations." The Ethiopian Construction Works Corporation (ECWC) shared valuable information about their "experiences, challenges, and suggestions for future digital advancements."

ECWC mainly uses "Enterprise Resource Planning (ERP) technology," created with a local vendor. This system includes modules for "HR administration, facility management, and payroll." While the ERP is fully implemented, the organization is still moving towards a "completely paperless environment."

In addition to ERP, ECWC uses "Building Information Modeling (BIM)" for important project tasks like "costing and scheduling," ensuring designs are compatible across various projects. They also utilize "drones and CCTV for monitoring." For example, drones were used in Alaba to "present project routes to the community," improving transparency. Additionally, a "fleet management system" has led to significant cost savings, cutting fuel cost by around "50%." By avoiding Theft.

The HR Director mentioned that the early stages of technology use have led to "increased awareness," especially in fuel management. The ability to "clearly monitor activities" has reduced disputes and inefficiencies. Switching from paper communication to digital platforms like ERP and Telegram has "streamlined information sharing," making communication quicker and more inclusive.

However, a major challenge is the "difficulty in accurately reflecting the impact of these technologies in annual evaluations." The current evaluation system struggles to show the changes brought by digital tools, making it hard to measure improvements.

Investing in digital technology involves "significant costs," such as software purchases and training. The HR Director stressed that "for any change to be successful, acceptance and commitment from top management is crucial." Initial resistance from staff was addressed through retraining and promoting employees into new roles. To build a more efficient workforce, ECWC

suggests focusing on developing professionals with "practical skills" instead of just "degree holders." The HR Director noted that "investing in short-term, skills-based training can enhance productivity significantly." They also proposed creating local digital tools to "reduce costs and create job opportunities," fostering innovation within the sector. While digitalization has improved "efficiency, communication, and project monitoring" at ECWC, ongoing growth and the ability to overcome challenges depend on "continuous investment in both training and technology."

### ***Sunshine Construction***

The General Manager of Sunshine Construction discusses the company's digitalization efforts, emphasizing their transformation in operations. Digitalization initiatives are closely tied to design work and daily reporting. Previously reliant on a paper-based system and radio communication, the company has now transitioned to using Telegram for daily reports. This shift allows all department heads to access updates easily, resulting in improved communication and operational efficiency. In addition to Telegram, Sunshine Construction employs GPS tracking to monitor fuel consumption in their machinery. The manager elaborates, "Previously, we couldn't track how 10 liters of fuel were consumed. Now, we've installed GPS trackers that monitor movement and alert us when vehicles deviate from assigned routes." This technology has significantly enhanced efficiency.

Sunshine Construction uses an ERP system comprehensively across logistics, procurement, finance, HR, and store management. It has been about two years since the ERP system was adopted, alongside Peachtree for finance and engineering design software. While they primarily use Excel for monitoring and evaluation, Microsoft Project is utilized for work program planning.

The impact of digitalization on team collaboration has been transformative. "We can create groups of 30 to 40 stakeholders for projects, and when someone posts a report, everyone sees it instantly." This level of transparency enables monitoring of project statuses from anywhere, further enhanced by the installation of cameras at all sites for real-time activity monitoring.

However, challenges in implementing digital tools are acknowledged. "These tools have made it harder for project managers to offer excuses for delays, as we can now track everything in real time." Resistance mainly came from machinery operators and drivers, which was addressed through orientation sessions and salary increases.

Looking ahead, there are plans to expand the ERP and GPS systems to all project sites. Efficiency in the Ethiopian construction sector is emphasized as essential. “Adopting modern digital technologies is crucial,” it is noted, adding that while initial investments can be daunting, the long-term benefits of better management and reduced theft are significant. Sunshine Construction's digitalization journey has enhanced communication, monitoring, and operational efficiency, positioning the company for future growth in a competitive market.

### ***Ovid Real Estate***

Ovid Real Estate has made significant strides in digitalization, primarily implementing ERP in its finance department. A representative states, “There is a plan to expand to other departments such as HR and procurement.” The company also utilizes social media channels like WhatsApp and Telegram for official communication, enhancing flexibility and timely decision-making. “Each project team is organized as an independent group on these platforms,” they note.

The organization employs Peachtree for accounting functions and Microsoft Project for scheduling. However, they have found the latter impractical for tracking operations. “Efficiency has improved due to the use of these digital tools, leading to better communication flow from remote sites,” the representative explains.

When discussing the impact of these digital tools, the representative emphasizes, “Efficiency has improved significantly.” The use of ERP has streamlined financial functions and approvals, allowing decision-making from any location. “This has helped shorten decision-making time, increasing overall efficiency,” they add.

The representative highlights that digital tools have positively influenced team efficiency. “These tools allow managers to be part of multiple teams simultaneously, leading various operations.” While acknowledging some drawbacks, such as the limitations of social media in replacing in-person meetings, they assert that the benefits significantly outweigh the challenges.

Although a company-wide qualitative analysis of the impact of digital tools is lacking, the representative states, “From practical day-to-day experience, it is clear that a lot has improved.” One key metric is the transition from hard-copy reports to daily digital updates, which facilitate timely interventions.

Regarding challenges faced during implementation, the representative notes, “There was a need to change existing hardware, and we encountered irregular network disconnections.” However, the staff was open and accepting of the ERP implementation. Training was conducted in phases, starting with hardware installation, followed by managerial training and on-the-job training for finance staff. Looking ahead, the representative emphasizes the importance of commitment to digitalization. “Companies that implemented digital tools early have reaped the benefits. Digitization is not an alternative; it’s essential for navigating the changing landscape of our industry.” They conclude, “Ovid Holding has established Ovid IT to support the implementation of ERP and other digital tools across our subsidiaries, and we believe this will lead to success.”

Digitalization has profoundly transformed communication and collaboration within the Ethiopian construction sector, as demonstrated by three key organizations: the Ethiopian Construction Works Corporation (ECWC), Sunshine Construction, and Ovid Real Estate.

At ECWC, the HR Director notes, “With the new systems in place, we can monitor everything clearly and without bias.” The shift from hard-copy communication to digital platforms has enhanced efficiency. Announcements are now posted directly on the ERP system and shared via Telegram, although some employees struggle with the ERP due to a lack of digital skills. To combat this, ECWC is implementing training programs.

Sunshine Construction highlights the transparency achieved through digitalization. The General Manager states, “We can create groups of 30 to 40 stakeholders for a project. When someone posts a report, everyone sees it instantly.” This allows for real-time monitoring of project statuses. Additionally, cameras installed at project sites enable visual oversight, ensuring accountability.

Ovid Real Estate describes the improvements brought by digital tools, stating, “We feel a lot has improved.” Daily reporting has replaced previous monthly formats, facilitating timely decision-making. However, challenges remain. The HR Director at ECWC emphasizes the importance of top management commitment for successful change and suggests government investment in practical skills training. At Sunshine Construction, challenges arose from resistance among machinery operators, which were addressed through orientation sessions and increased salaries. Ovid Real Estate stresses the necessity of commitment to investing in digital tools, asserting that “digitization is not an alternative; it’s essential for operating in today’s landscape.” while these

organizations have made significant strides in digitalization, ongoing investment in training and support is crucial for overcoming challenges and fostering continued growth in the Ethiopian construction industry.

#### **4.11. Discussion**

In order to improve organizational performance in Grade 1 contractor companies, the integrated regression analysis and correlation matrix offer vital insights into the connections between digitization, employee training, management support, technology infrastructure, and workflow efficiency. The results emphasize the significance of a thorough approach to digital transformation and are consistent with previous research. These factors are clearly linked, according to our preliminary checks (correlation matrix).

Digitalization ( $r=0.96$ ,  $p=0.002$ ) and employee training ( $r=0.62$ ,  $p=0.04$ ) are closely related to a company's performance. These results corroborate previous research by Alemayehu Geda (2022) on digitalization and its role in the financial sector and Solomon (2022) on the significance of IT for business success. Regression analysis reveals the precise effect of every component on output. The degree of organizational digitization has a very strong positive impact ( $\beta=0.456$ ,  $p=.000$ ), demonstrating its vital role in improving the efficiency of operations. Skills and training for employees also play a big role ( $\beta=0.312$ ,  $p=.001$ ), highlighting how important it is to spend money training your employees to use new technology. Support from management is crucial ( $\beta=0.289$ ,  $p=.002$ ), emphasizing the importance of leadership in promoting innovative ideas and successful digital projects—a point also made by Kachali and Kachali (2021).

IT infrastructure is beneficial ( $\beta=0.198$ ,  $p=.004$ ), but other factors have a greater impact. Accordingly, for true progress, good technology must be combined with appropriate digitization and training, in line with Hailu and Tadesse (2023). Finally, effective workflows have a significant positive effect ( $\beta=0.620$ ,  $p=.001$ ), bolstering Tadeles (2022) perspective on efficient procedures. Moreover, other elements have a major impact on workflow efficiency ( $\beta=0.450$ ,  $p=.003$ ), suggesting that improved workflow actually results in improved performance. About 68 percent of the variations in organizational performance can be explained by our model, which fits well (Adjusted  $R^2=0.683$ ). The inclusion of these variables greatly enhanced our model's performance explanation ( $R^2$  change = 0.001), and the model as a whole is statistically sound

( $F=25.67$ ,  $p=.000$ ). Key informant interviews with Sunshine Construction, Ovid Real Estate, and Ethiopian Construction Works Corporation (ECWC) in Ethiopia's construction sector make it abundantly evident how the industry is evolving due to digitalization.

The HR Director at ECWC noted significant increases in productivity brought about by ERP systems. With the new systems in place, we can monitor everything clearly, they said, referring to improved communication and more transparent operations. Nonetheless, they continue to have issues with staff member's digital skills. The general manager of Sunshine Construction emphasized how collaboration has greatly increased thanks to apps like Telegram. Groups of 30 to 40 stakeholders can be formed for a project, they clarified, enabling real-time project updates. Ovid Real Estate's decision-making process has accelerated since switching from monthly to daily digital reporting formats. However, they acknowledged that network dependability and hardware upgrades presented challenges. These businesses all agree on the critical necessity of continuous training and strong management commitment. In particular, the ECWC emphasized that effective change requires top management commitment. While there has been significant progress in digitization, these insights confirm that ongoing investments in leadership support and staff training are essential to overcoming challenges and promoting long-term growth in Ethiopia's construction sector. Combining practical experiences with our quantitative analysis reveals that technological infrastructure, management support, employee training, and digitization are vital for an organization's success. Our study of the close relationships among these factors emphasizes the need for a comprehensive strategy to improve productivity in the rapidly evolving construction industry. By focusing on digital adoption, investing in employee training, and securing management support, companies can create more efficient operations that lead to sustained success in a competitive market.

## CHAPTER FIVE

### 5. SUMMARY OF FINDING, CONCLUSION AND RECOMMENDATIONS

This chapter presents the findings obtained from the analysis and discussion of the collected data, conclusions derived from the findings of the research on how digitization effect the company's organizational performance and highlights the role of workflow efficiency as mediators in Grade 1 construction contractor companies. The results indicate that digital tools improve communication, improve workflow efficiency, and enhance overall organizational performance. It is mentioned that these organizations should continue investing in technology, offer thorough training, and foster a culture that welcomes improvements to fully benefit from digitization.

#### 5.1. Summary of Findings

Examining the effect of digitization on organizational performance: mediating role of workflow efficiency in Grade 1 construction contractor companies is the main goal of the research. Then, a descriptive analysis reveals some important statistics on performance-influencing factors, for which mean values indicate a high priority of actions: workflow efficiency score 4.15, employee training and skills score 3.90, management support score 4.05, organizational performance score 3.75, and level of digitization score 4.10. These factors have strong relationships, as demonstrated by the regression and correlation matrix integration.

Additionally, employee training ( $r = 0.62$ ,  $p = 0.04$ ) and digitization level ( $r = 0.96$ ,  $p = 0.002$ ) are connected with the performance level of the organization. These connections highlight how important digital tools and employee readiness are to improving organizational outcomes. Because of the level of digitization, the key regressions primary insights are shown in the following results.

An important unstandardized coefficient is 456, and the p-value is 1. 000, which also has significance. These findings demonstrate how digital transformation has a major effect on performance, underscoring its importance in operational efficacy. Employee skills and training also have a significant impact on performance, as indicated by the unstandardized coefficient 0.312 ( $p=0.01$ ). Therefore, to get the most out of new technologies, ongoing investment in workforce development is necessary. Strong management support is essential for the success of digital initiatives, as evidenced by the significant improvement in performance ( $\beta=0.289$ ,  $p=$ .

01). Performance is positively correlated with technological infrastructure as well ( $\beta=0.198$ ,  $p=.004$ ), albeit with a weaker effect than other factors. This implies that while having a solid technological foundation is important, real improvements require effective digitization and staff training. An important factor that significantly improves organizational performance is workflow efficiency ( $\beta=0.620$ ,  $p=.001$ ). Several independent factors have a significant impact on the efficiency of the workflow ( $\beta=0.450$ ,  $p=.003$ ). The overall regression model is statistically significant ( $p=.00$ ), and our model successfully explains roughly 68.3% of the variation in organizational performance (Adjusted  $R^2=0.683$ ).  $000$ ). Conversations with Ethiopian construction companies such as Sunshine Construction, Ovid Real Estate, and ECWC offer lucid illustrations of how digitalization has changed their business practices. The HR Director at ECWC observed that ERP systems had increased efficiency, improving transparency and communication. Better collaboration through digital tools like Telegram that allow for real-time updates was highlighted by the general manager of Sunshine Construction. Making decisions more quickly was made possible by Ovid Real Estates switch to daily digital reporting. Notwithstanding these successes, there are still issues, like the constant requirement for strong management support and ongoing training to close the skills gap in digitalization. The research highlights the critical benefit of improved level of digitization, improved technology infrastructure, continuous employee training and sustainable management support in boosting organizational performance. To construct an operative operational context and guarantee long-term success in Ethiopia's biggest construction industry, a systematic and consistent investment in these areas is obligatory.

## **5.2. Conclusion**

The study revealed an extensive verity of issues related to the effect of digitization on organizational performance: mediating role of workflow efficiency and examine how workflow efficiency in Grade 1 construction contractor companies is connected to the effect of digitization on their general performance. The findings show that implementing digital technologies significantly enhances organizational achievement, with a clear link between better level of digitization and improved performance results. To enhance operational efficiency, companies must embrace competent digital technologies and tools. Key to this process are advanced level of

digitization systems, Technological infrastructure, management support, and thorough employee training.

Developing employees with continuous training helps the organization to benefit more from new digital solutions. Furthermore, constructing a culture that welcomes digital system change requires dedicated management to ensure these efforts are carried out effectively and continued for long.

A main factor linking digitization to better organizational performance is the mediating role of workflows. The research highlighted that efficient workflow lead directly to greater productivity and efficiency, emphasizing the need for the construction sector to focus on improving their digitization level as part of their digital transformation.

Interviews with prominent construction companies like Sunshine Construction, Ethiopian Construction Works Corporation, and Ovid Real Estate support these findings. After adopting digital tools, these companies experienced reduces embezzlement, reduced cost, better teamwork, clearer communication, and faster decision-making. For instance, project teams could share updates instantly, could access reports anytime and communicate more openly through digital platforms.

Despite these positive developments, challenges remain. Reinforcing employee resistance, closing the digital skills gap requires ongoing leadership commitment and continuous training. Companies must understand that fruitful digital transformation is a continuing process, requesting balanced investment in both new digital solution and employee development and sustainable management support..

In conclusion, the study emphasis the importance of all-inclusive approach that prioritizes management support, employee training, level of digitization, and technology infrastructure. Continuous investment in these aspects is essential to overcome challenges and navigate the complexities of digital transformation and enjoy its fruits of productivity. By addressing these critical areas, organizations in Ethiopia's competitive construction sector can improve their operations efficiency and secure long-term organizational success.

## **5.3. Recommendations**

### **Recommendations based on findings**

**Invest Smartly in Digital Tools:** Smart investments can improve communication; make processes smoother, and increase efficiency, ultimately leading to better organizational performance. Choose digital tools that are well suited for your specific needs.

**Improve Employee Training:** Implement thorough training programs to help your employee make the most of digital solution tools. Consistent training keeps everyone capable and skilled in using new digital tools and technologies.

**Enhance Management Support:** It's essential for managements to actively uphold a culture that embraces digital innovations and transformation. Their unreserved support and provision of necessary resources are crucial for successful digital solution initiatives.

**Improved Technology Infrastructure:** Assess and update your technology framework on a regular interval to effectively support digital efforts. Up-to-date infrastructure ensures the efficient operation of digital tools, greatly enhancing performance and efficiency.

**Improve Workflow efficiencies:** Emphasis on making work processes more efficient. Better workflows allow for more effective use of digital tools, enhances overall performance levels and output.

**Construct an Innovative Culture:** Foster a cultural environment that welcomes technological advancements and new ideas. This openness allows your company to adapt rapidly to changes in the construction industry for its competitive advantage..

**Perform Digital initiative Performance Reviews Regularly:** Regularly evaluate digital initiatives impact on business performance and their effectiveness. These assessments help identify areas for improvement and guide informed decisions that improve operational effectiveness.

**Involve All Stakeholders in Digital Transformation Initiatives:** Encompass managers, staff, and external partners in the development and implementation of digital initiative projects. Their contribution and perceptions are crucial to the successful implementation of these initiatives.

## **5.4. Further research directions**

Future research should study comparative research between organizations that successfully implement digital initiatives and those that struggle could bring deeper insights into best practices for the sector. Future work should measure the effects of emerging technologies such as artificial intelligence and machine learning on organizational performance. It would be valuable to investigate how various digital initiatives improve efficiency and productivity in various settings. Future research should extend beyond the construction sector to explore the long-term impact of digitization on organizational performance across different sectors. Finally, studies could examine the role of organizational culture in driving successful digital transformation, focusing on how leadership styles and employee involvement influence outcomes.

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## **APPENDIX**

**Addis Ababa University**

**College of Business and Economics**

**Department of Management**

**Executive Master of Business Administration program**

### **Introduction to the Questionnaire**

This questionnaire is part of a research study for the Executive Master of Business Administration program at Addis Ababa University, College of Business and Economics, Department of Management. The study aims to the effect of digitization on organizational performance and the mediating role of workflow efficiency in selected Grade 1 contractor companies. The main purpose of this questionnaire is to collect information that will help us understand how digital tools and technologies impact various operations within these companies. We want to hear from employees at all levels to get a complete picture of how digitization influences their work. Your participation in this study is completely voluntary, and your responses will be kept confidential. The information you provide will be used only for academic purposes, helping us learn more about the challenges and benefits of digital transformation in the construction industry. We appreciate your time and effort in completing this questionnaire, as your feedback will be very important for our research. If you have any questions or need more information, please contact Abey Abebe Tefere **at +251 93 908 9059**. Thank you for your participation!

## Section One

### Socio-demographic information

Please select your response by ticking the appropriate box.

S.No	Demographic Variable	Response Options
1	Age	<input type="checkbox"/> 18-24 <input type="checkbox"/> 25-34 <input type="checkbox"/> 35-44 <input type="checkbox"/> 45-54 <input type="checkbox"/> 55 and above
2	Gender	<input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/>
3	Level of Education	<input type="checkbox"/> Diploma <input type="checkbox"/> Bachelor's Degree <input type="checkbox"/> Master's Degree <input type="checkbox"/> Doctorate
4	Job Position	<input type="checkbox"/> Entry Level <input type="checkbox"/> Mid-Level <input type="checkbox"/> Senior Level <input type="checkbox"/> Management
5	Years of Experience	<input type="checkbox"/> Less than 1 year <input type="checkbox"/> 1-3 years <input type="checkbox"/> 4-6 years <input type="checkbox"/> 7-10 years <input type="checkbox"/> More than 10 years
6	Company Name	[-----]
7	Employment Status	<input type="checkbox"/> Full-time <input type="checkbox"/> Part-time <input type="checkbox"/> Contract <input type="checkbox"/> Internship

## Section Two

Please select your response by ticking the appropriate box.

### Effect of Digitization Level on Organizational Performance

S.No	Question	Response Options
1	The level of digitization in our company positively affects overall organizational performance.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
2	Digital tools have improved our decision-making processes.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
3	Digitization has led to increased productivity in our organization.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
4	The use of digital technologies has enhanced our service delivery.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
5	Our organization effectively utilizes digital resources to achieve its goals.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree

### Influence of Workflow Efficiency on Organizational Performance

S.No	Question	Response Options
1	Improved workflow efficiency through digitization enhances our organizational performance.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree

2	Digital tools have streamlined our internal processes.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
3	Workflow automation has reduced the time required to complete tasks.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
4	Efficient workflows contribute to higher employee satisfaction.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
5	Our company's performance metrics have improved due to enhanced workflow efficiency.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree

**Relationship between Employee Training in Digital Tools and Organizational Performance**

S.No	Question	Response Options
1	Employee training in digital tools contributes significantly to improving organizational performance.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
2	Our organization provides adequate training for employees on new digital tools.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
3	Trained employees are more effective in using digital technologies.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
4	Ongoing training in digital skills is essential for our company's success.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
5	Investment in employee training leads to better organizational outcomes.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree

### Effect of Management Support on Digital Initiative Implementation

S.No	Question	Response Options
1	Management support is crucial for the successful implementation of digital initiatives.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
2	Leaders in our organization encourage the adoption of digital technologies.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
3	Management effectively communicates the importance of digital transformation.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
4	Employees feel supported by management when implementing new digital tools.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
5	Strong leadership commitment enhances our digital initiative success.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree

### Technological Infrastructure Quality and Organizational Performance

S.No	Question	Response Options
1	The quality of our technological infrastructure significantly affects our organizational performance.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree

2	Our IT systems are reliable and support our operational needs.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
3	Up-to-date technology is essential for maintaining competitive advantage.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
4	Poor technological infrastructure hinders our organizational performance.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
5	Our organization invests adequately in technological upgrades.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree

**Open-Ended Question**

Please share any additional comments or insights regarding how digitization and management practices impact your organization's performance?

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## **SECTIONS THREE**

### **Interview Questions**

- 1.** Can you describe the digital tools and technologies your organization has implemented? How are they integrated into daily workflows?
- 2.** In your experience, how has digitization affected the efficiency of workflows within your organization? Can you provide specific examples?
- 3.** How has digitization influenced communication and collaboration among team members? Have you noticed any changes in team dynamics?
- 4.** What impact has digitization had on overall organizational performance? Are there measurable outcomes that you can share (e.g., productivity, project completion rates)?
- 5.** How have employees responded to the introduction of digital tools? What training or support has been provided to help them adapt to these changes?
- 6.** What challenges have you encountered during the digitization process, and how have you addressed them? What opportunities do you see for further improvements?
- 7.** Please share any additional comments or insights regarding how digitization and management practices impact your organization's performance?