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SCHOOL OF COMMERCE

DEPARTMENT OF BUSINESS ADMINSTRATION AND INFORMATION SYSTEM

DIGITAL TECHNOLOGY ADOPTION AND SUCCESSION PLANNING EFFECTIVENESS: THE MEDIATING ROLE OF GOVERNANCE STRUCTURE IN ETHIOPIAN FAMILY-OWNED COFFEE EXPORT COMPANIES

BY

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June, 2026

ADDIS ABABA, ETHIOPIA



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APPROVAL SHEET

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DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of Kuribachew Gizaw (Ph.D.). All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher-learning institution to earn any degree.

AI Use Statement

In preparing this thesis, I made limited use of artificial intelligence tools for language refinement and clarity improvement (e.g., grammar checking, phrasing suggestions). All intellectual contributions including the research design, data analysis, contextual interpretation, and theoretical synthesis, are my own. The AI assistance was restricted to editorial support and did not generate or determine the substantive content of this work.

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ENDORSEMENT

This thesis has been submitted to Addis Ababa University School of Commerce for examination with my approval as a university advisor.

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Advisor Signature

Addis Ababa University, Addis Ababa June 2026

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ACRONYMS AND ABBREVIATIONS

AI – Artificial Intelligence

GDP – Gross Domestic Product

INGO – International Non-Governmental Organization

IT – Information Technology

NPM – New Public Management

DEG – Digital Era Governance

RBV – Resource-Based View

SEW – Socioemotional Wealth

SEM – Structural Equation Modeling

ABSTRACT

The purpose of this study is to examine the effects of digital technology adoption on succession planning effectiveness within family-owned coffee export companies in Ethiopia, focusing on the mediation of the governance structure variable. The current study employed quantitative research approach along with explanatory research design. Cross-sectional primary data was collected through standardized questionnaire from 184 respondents in 77 family-owned coffee export companies located in Addis Ababa, Ethiopia. To assure the representativeness of the data, a stratified random sampling has been conducted to select sample respondents among the targeted population. Structural equation modeling and mediation analysis (bootstrap approach with 5,000 resamples) were used to test the hypotheses. As a result, it has been proven that all four digital adoption dimensions have significant positive impact on succession planning effectiveness, management support and strategy (β = 0.363) and integration into operations (β = 0.337) being the strongest determinants. In turn, the governance structure partially mediates the link between the digital technology adoption and succession planning effectiveness (indirect effect = 0.110; 13.0% of total effect mediated). Hence, digital adoption affects succession planning not only directly but also indirectly via governance structures (total effect = 0.227; 97.0% of indirect effect; p<0.001). The overall model explains 62.5% of the variation in succession planning effectiveness. In conclusion, digital technology adoption enhances succession planning in Ethiopian family-owned coffee exporters, both directly and through governance structures, though weak infrastructure and limited training constrain outcomes. Owners should convert leadership support into digital budgets and integrate strategies across departments, while establishing governance mechanisms such as family councils and advisory boards.

Keywords: Digital Technology Adoption, Governance Structure, Succession Planning Effectiveness, Family-Owned Businesses, Coffee Export

CHAPTER ONE: INTRODUCTION

1.1. Background of the Study

Family-owned firms stand as the backbone of global prosperity, representing the majority of enterprises worldwide and contributing substantially to employment, innovation, and GDP growth (Nave et al., 2025; Nordqvist, Sharma, & Chirico, 2025). Yet their sheer prevalence does not guarantee sustainability, as many fail to survive beyond the founding generation. The critical determinant of longevity lies in succession planning, a strategic process that secures leadership continuity, embeds entrepreneurial vision, and safeguards intergenerational resilience. Without deliberate succession strategies, family firms risk losing their competitive edge and social contributions; with them, they transform potential vulnerabilities into opportunities for renewal, ensuring that these enterprises remain enduring custodians of economic growth and cultural stability across generations.

In the case of developing countries, where regulations and stock markets cannot catch up with the fast pace of businesses' development, family firms play an important role in building economic foundations via relations-based contracting and reputation transactions (La Porta, Lopez-de-Silanes, & Shleifer, 1999; Calabrò, Brogi, & Torchia, 2023). Not only do family firms help create strong foundations for future development and prosperity by relying on the power of reputation and trust, but they also sustain culture, develop entrepreneurship, and stabilize society at times of changes (Ward, 2011). In the case of Ethiopia, for instance, family-owned companies contribute to economic growth and social stability by creating jobs and innovations and fostering civil activity in such areas as manufacturing, logistics, and agriculture.

However, family businesses face serious sustainability problems. For example, research suggests that no more than one-third of family firms manage to succeed in passing from the first to the second generation, and only 12 percent transition to the third generation, and fewer than 3 percent survive longer than that (Ward, 2011; Nordqvist et al., 2025). It means that succession planning is extremely important for family-owned businesses, and, unfortunately, many Ethiopian family-owned companies fail to do it effectively. Inadequate governance and innovation processes as well as insufficient adoption of technology are cited as key challenges (Calabrò et al., 2023; Atienza-Barba, Álvarez-García, Meseguer-Martínez, & Barba-Sánchez, 2025).

Technology adoption stands out among other challenges as being especially critical. The adoption of technologies such as AI and digital transformation becomes a must for the implementation of innovative ideas and succession planning in modern businesses. It has been discovered that successful application of digitization depends heavily on the firm's absorptive capacity and governance (Awuah-Gyawu et al., 2025; Yordanova, Pergelova, & Tran, 2026). Even though innovation is viewed as being very important in Ethiopia, not even a quarter of family firms implements it properly, and almost half are uncertain about their succession plans. Such factors as lack of resources, inflation, and restrictions to accessing loans may be blamed for the poor adoption rate (World Bank, 2023; African Development Bank, 2024).

Even though previous research examined issues of succession planning and innovation in the context of Ethiopian family businesses (Gizaw, 2024; Desta, 2022), there are few studies related to the adoption of technological innovations. The gap in literature prompts a need to explore whether there is a connection between technology adoption and the success of succession planning in family-owned companies. Exploring technology adoption in family firms in general and, in particular, its relationship to succession planning in coffee exporters' businesses in Ethiopia will contribute to the topic. Based on technology adoption, innovation, and governance theories, it will become possible to establish leadership practices necessary for securing continuity.

1.2. Statement of the Problem

Family-owned coffee export companies owned by Ethiopians face serious succession problems that threaten their viability and, in turn, the sustainability of one of the key industries that supports a living for millions of people. It should be noted that coffee is the main product of Ethiopia's exports, accounting for roughly one-third of the value of its foreign exchange income. At the same time, family business firms prevail within the industry (Leopizzi, Mechelli, & Cimini, 2021). Even though these businesses are widespread and have a huge impact on the country's economy, they show poor readiness for succession, evidenced by numerous weaknesses. Empirical evidence shows that there is a disturbing gap when it comes to the number of family councils needed for proper governing of family and business relationships, as well as transition from one generation to another. In addition to that, the absence of strategies and evaluations and other elements of planning, together with gaps in technology, makes proper decision-making impossible (Calabrò, Brogi, & Torchia, 2023).

Following best practices, family companies need to develop proper governance systems, choose capable successors, ensure proper hiring based on meritocracy, and plan succession strategically (Ward, 2011; Le Breton-Miller, Miller, & Steier, 2004). In order to facilitate succession, it is important to make use of modern digital technologies, thus implementing improvements to the processes of working in a company, introducing young specialists, and facilitating intergenerational knowledge transfer (Atienza-Barba, Álvarez-García, Meseguer-Martínez, & Barba-Sánchez, 2025). However, as was mentioned above, family businesses operating in the coffee exporting industry in Ethiopia demonstrate poor readiness for implementing digital technology.

Research has shown that even though many businesses are aware of the importance of innovations, only a few of them have plans, and a great deal lacks any understanding about the role future generations would play in the process of innovation (Yordanova et. al., 2026). This problem can be attributed to the lack of available financing due to high inflation and credit rationing (Awuah-Gyawu, Boateng, & Osei, 2025). Poor succession can lead not only to bad consequences for individual enterprises but for the economy as a whole since family-owned coffee export businesses stabilize the economic situation within the region due to their activities and community ties, creating jobs, foreign currency revenue, and trust built in the course of decades (Nordqvist, Sharma, & Chirico, 2025).

Despite the global literature on succession and innovation, there remains a lack of empirical studies examining these relationships within Ethiopia's coffee export sector. This study therefore seeks to investigate the interplay between technology adoption, succession planning, and governance mechanisms in Ethiopian family-owned coffee exporters, addressing a critical gap in both theory and practice.

1.3. Research Questions

Does governance structure mediate the relationship between digital technology adoption and succession planning effectiveness in Ethiopian family-owned coffee export companies? Specifically:

- What is the direct effect of digital technology adoption (infrastructure readiness, digital skills and competence, integration into operations, management support and strategy) on succession planning effectiveness in Ethiopian family-owned coffee export companies?

- What is the direct effect of digital technology adoption on governance structure in Ethiopian family-owned coffee export companies?
- What is the direct effect of governance structure on succession planning effectiveness in Ethiopian family-owned coffee export companies?
- Does governance structure mediate the relationship between digital technology adoption and succession planning effectiveness in Ethiopian family-owned coffee export companies?

1.4. Objectives of the Study

1.4.1. General Objective

To investigate the effect of digital technology adoption on succession planning effectiveness in Ethiopian family-owned coffee export companies and to examine the mediating role of governance structure in this relationship.

1.4.2. Specific Objectives

The specific objectives of this study are to:

- Examine the direct effect of digital technology adoption (infrastructure readiness, digital skills and competence, integration into operations, management support and strategy) on succession planning effectiveness in Ethiopian family-owned coffee export companies.
- Examine the direct effect of digital technology adoption on governance structure in Ethiopian family-owned coffee export companies.
- Analyse the direct effect of governance structure on succession planning effectiveness in Ethiopian family-owned coffee export companies.
- Determine whether governance structure mediates the relationship between digital technology adoption and succession planning effectiveness in Ethiopian family-owned coffee export companies.

1.5. Significance of the Study

The current study can be considered significant from the theoretical, methodological, practical, and regulatory aspects. It examines governance mechanisms as mediators between digital technology adoption and successional effectiveness of family firms operating in Ethiopia and exporting coffee

to other countries. From the theoretical perspective, the integration of Technology Acceptance Model, Resource-Based View, and Socioemotional Wealth theories into a mediation approach allows extending the application of those theoretical approaches to succession planning within family enterprises.

In the methodological context, the present study is valuable as it offers primary data concerning digital technology adoption, succession planning, and governance effectiveness of Ethiopian family-owned firms dealing with the export of coffee products. The usage of mediation analysis based on multiple linear regression using SPSS 28.0 PROCESS MACRO helps create a reliable statistical basis for the analysis of relationships between various succession variables.

In practical terms, the results of the study will help family business owners, successors, and consultants identify the key factors influencing successions, such as digital technology adoption and governance effectiveness. This information can help establish efficient succession practices in family enterprises. From the regulatory perspective, professional organizations will find this research useful as it highlights the necessity to develop particular guidelines aimed at facilitating digital adoption and designing efficient governance systems in family enterprises within specific sectors.

1.6. Scope of the Study

In relation to the location, this research encompasses only family businesses that deal with exporting coffee products. In this regard, because the majority of coffee exporters in Ethiopia are situated in the capital city, the location of this research encompasses only family-owned coffee export companies located in Addis Ababa. This geographic scope is justified due to the feasibility of data collection, and because Addis Ababa is a major center for formal coffee exports in Ethiopia.

In terms of the population, it encompassed only one category of family businesses, which is the family-owned coffee export company. From the foregoing discussion, it can be noted that coffee is the principal export product in Ethiopia and the family businesses control the country's coffee exports. Hence, this type of family businesses in Ethiopia's coffee export industry provides a good setting for answering the proposed research questions. Micro-enterprises employing less than five people or non-formal organizations wasn’t covered since the process of gathering credible data about them may prove difficult. Moreover, since such types of enterprises have their own unique

way of implementing succession, the generalization of results to other firms would be rather difficult.

In terms of variables, one variable was chosen as an independent variable and this is digital adoption (infrastructure readiness; digital competence; integration; and management support and strategy). Four aspects of governance were considered (boards of directors; family councils; advisory boards), while the dependent variable was succession planning effectiveness which encompasses several dimensions, namely: transition smoothness; stakeholders' satisfaction; performance during succession; knowledge transfer; and family members harmony.

A quantitative approach was adopted and data collection was done in a cross-sectional fashion. Primary data is collected via survey questionnaires for family business owners/managers/next generation members. Data was gathered at one particular moment in time (March-April 2026).

1.7. Operational Definitions of Terms

Family-Owned Coffee Export Company - An exported coffee beans company that has been licensed by the Ethiopian Coffee and Tea Authority to operate, whereby the company's majority ownership is held by the family who has control over the business and has named at least two family members as leaders, with intentions to take over generationally (Chua, Chrisman, & Sharma, 1999).

Digital Technology Adoption - Degree of digital technology implementation as measured along four constructs:

- Infrastructure Readiness - Presence and readiness of digital tools, internet access, equipment, IT infrastructure, etc., existing in the family firm (Michelotto & Joia, 2024).
- Digital Competence - Capabilities of the employees and potential successor(s) in using the digital tools in the family business, as well as appropriate training (Vial, 2019).
- Digital Integration - Integration of digital technologies into the business' operations, productions, logistics, customer engagement, etc. (Bharadwaj, El Sawy, Pavlou, & Venkatraman, 2013).
- Digital Strategy - Leadership support, resource allocations, and strategies aimed towards the implementation of digital change (Kane, Palmer, Phillips, Kiron, & Buckley, 2015).

Governance Structure - Structures employed to exert power and establish accountability through governance arrangements, involving boards of directors, family boards, advisory boards, constitutions of the firms, etc. (Sharma, Chrisman, & Gersick, 2012).

Leadership Succession Effectiveness - Perceptions on the success of leadership succession based on how smooth the process was, stakeholders' satisfaction, performance sustainability, knowledge sustainability, and family harmony sustainability (Le Breton-Miller, Miller, & Steier, 2004; Ward, 2011).

Next Generation Involvement - Degree of the participation of next generation family members in the business activities, especially regarding technology and other strategic issues (Lambrecht & Lievens, 2008).

1.8. Organization of the Study

The thesis is structured into five brief chapters. The first chapter introduces the research by explaining its background, problem definition, objectives, research questions, significance, scope, terminologies, and the general structure of the entire research process. The second chapter highlights relevant theories, conceptual frameworks, past research findings, and hypotheses, with particular focus on the role of digitalization amongst Ethiopian coffee exporters. The third chapter provides detailed information about the research method used, which covers the sampling procedure, data sources, data collection methods, analysis tools, validity, and reliability of the research process. The fourth chapter outlines the findings and interpretations of the findings in line with the theoretical perspective.

CHAPTER TWO: LITERATURE REVIEW

This chapter is structured presents theoretical background elaborated in detail, utilizing four different perspectives that help examine family business practices, application of technology, and corporate governance. Secondly, main variables are explained theoretically, taking their distinctive features and relationship into account. Thirdly, digital technologies used in the coffee exporting businesses in Ethiopia are discussed. Fourthly, empirical data is analyzed from the thematic perspective. Fifthly, hypotheses are formulated. Finally, the constructed conceptual model is provided.

2.1. Theoretical Foundations

There are four theoretical perspectives that are utilized to justify how digital technology adoption affects succession planning effectiveness and what makes governance structure act as a mediator.

2.1.1. Socioemotional Wealth Theory

Socioemotional wealth (SEW) theory, introduced by Gómez-Mejía et al. (2007), challenged conventional wisdom regarding family firm behavior. According to SEW theory, family members are motivated not only by profit maximization but also by the desire to protect socioemotional assets, including family control, affective attachment, legacy transmission, and family reputation. Families may sacrifice economic value to achieve these goals. Loss aversion related to socioemotional wealth has implications for both technology adoption and governance structures. For example, a business owner may refuse to implement cloud-based solutions due to fear of losing control over personal information (Åberg, Nordqvist, & Tiru, 2024).

From the SEW perspective, governance structures are often not implemented for two reasons. First, formal mechanisms such as family councils with independent members may be perceived as threats to family control (Smajić, Potočan, & Nedelko, 2024). Second, SEW theory reveals that acceptance of formal governance occurs when such structures are interpreted as mechanisms for ensuring the firm is passed to capable heirs (Berrone, Cruz, & Gómez-Mejía, 2012). In Ethiopian coffee export enterprises, where family reputation and community relations are crucial, SEW plays a significant role. Thus, SEW theory enables understanding of how governance structures affect the relationship between technology adoption and succession.

2.1.2. Stewardship Theory

While SEW theory focuses on emotional motivations, stewardship theory highlights corporate responsibility. According to Davis, Schoorman, and Donaldson (1997), family firm managers can be characterized as stewards responsible for the enterprise's future existence. The stewardship mentality arises because the firm is viewed as an extension of the family, requiring protection for successful transmission to descendants. Within family businesses, governance structures represent institutionalized stewardship, supporting loyalty and responsibility (Corbetta & Salvato, 2004).

Stewardship theory postulates that formal governance structures are willingly implemented because they demonstrate managerial commitment to duties. Family councils and advisory boards reflect stewardship principles by educating successors and transmitting institutional memory (Miller & Le Breton-Miller, 2006). Additionally, stewardship theory implies that well-governed family firms perceive digital technology adoption as a means of preserving institutional memory and maintaining competitiveness (Zahra, Hayton, & Salvato, 2004). In Ethiopian coffee export firms, governance structures based on stewardship principles thus contribute to technology implementation and effective succession.

2.1.3. Resource-Based View

Socioemotional wealth and stewardship theories focus on motivations, whereas the resource-based view (RBV) emphasizes competitive advantage. As stated by Barney (1991), competitive advantage derives from a company's internal resources. Family business scholars have applied RBV to argue that family-specific resources—tacit knowledge, relational capital, founder's vision, and reputation—possess value, rarity, inimitability, and non-substitutability, thereby driving competitive advantage (Habbershon & Williams, 1999). From the RBV standpoint, succession planning becomes a process aimed at preserving and transferring family-specific resources across generations; otherwise, competitive advantage erodes.

RBV explains the importance of governance structures for technology adoption and succession. Governance structures such as family councils and advisory boards ensure that tacit knowledge accumulated by the founder is codified (Sharma, Chrisman, & Gersick, 2012). Digital technology adoption is both a resource and a tool for transferring family-specific resources. Cloud computing, knowledge management software, and digital archives convert tacit into explicit knowledge that can be preserved and transferred. However, without proper governance structures, technology adoption

may destroy rather than preserve resources. In Ethiopian coffee export firms, where sourcing relationships with smallholder farmers and coffee quality control knowledge represent intangible assets, governance structures mediate the effect of technology adoption on competitive advantage preservation.

2.1.4. Technology Acceptance Model

The Technology Acceptance Model (TAM), developed by Davis (1989), focuses on psychological aspects of adoption decisions. TAM suggests that technology use intention depends on two variables—perceived usefulness and ease of use—both affected by external factors including organizational support and social influence.

From the TAM perspective, governance structures such as family councils and advisory boards promote technology implementation by creating opportunities to discuss advantages and reduce uncertainty. Management support is the most important variable affecting perceived usefulness and ease of use. Thus, TAM explains how governance structures influence technology adoption and, consequently, succession outcomes. In Ethiopian coffee export companies, TAM can be used to examine the effect of governance structure on technology implementation and institutional memory transfer.

Synthesis: The integration of these four theories creates a comprehensive framework. SEW theory illuminates motivational backgrounds for implementing governance structures. Stewardship theory identifies reasons for accepting governance. RBV explains the importance of governance and technology adoption for competitive advantage and sustainability. TAM examines adoption behavior. However, tensions exist among these perspectives: SEW predicts resistance to formal governance, while stewardship theory predicts willing adoption. Similarly, RBV emphasizes resource preservation, whereas TAM focuses on individual perceptions. These theoretical debates are addressed in the empirical review that follows.

2.2. Conceptual Foundations

This section defines and grounds the core constructs of the study into context. We define each construct in terms of its function within family-owned coffee export companies as well as how it relates to succession planning.

2.2.1. Digital Technology Adoption

Digital technology adoption refers to the use of digital technologies by particular family owned coffee export company in each part, and how these technologies applied themselves into core business processes. Digital technology adoption in this study takes shape through four dimensions that are closely intertwined with each other.

Infrastructure readiness relates to availability and suitability of all hardware, software, network connectivity and any other supporting systems required to carry out digital operations. Infrastructure readiness in the given context of Ethiopian coffee export includes international means of communication such as internet, computers and mobile devices for staff members, cloud-based accounting and enterprise resource planning (ERP) systems with shipment tracking functionality and digital platform for customs documentation. Infrastructure readiness is a necessary enabler — without sound hardware and connectivity, the other dimensions of digital adoption will fail to work (Deloitte, 2025).

Digital Skills and Competence include members of family and employee's knowledge, skills and competencies to use the digital tools. That ranges from elementary digital literacy (emails, spreadsheets, word process) to intermediate technologies (accounting software, data analysis, customer relationship management systems and e-commerce platforms) to advanced use of digital tools (data analytics and artificial intelligence applications and digital marketing). Digital skills tend not to span generations in Ethiopian family firms, with younger members often digitally more capable than older ones (HST Consulting, 2025). The effectiveness of succession planning hinges on building or instilling those skills in next-generation members while also ensuring that knowledge transfer happens as a matter of course.

Integration into Operations is the degree to which digital technologies are incorporated in day-to-day business processes and value-creating activities. Integrate your coffee exporter business processes with digital technologies which include order and customer management to supplier (farmer) relationship management, quality tracking from cherry to export, logistics and shipping documentation; inventory tracking financial management and regulation for EHDA/ECTA requirements in Ethiopia. Integration is also different from simply adopting digital tools; as S. Sharma and his colleagues (Sharma, Chrisman, & Gersick, 2012) explicate in their models of succession within family businesses: a company might own digital diffusion tools but may not be

using them within its workflows which limits the effects of successions when that same company digitizes functions via those same owned tools.

Management Support and Strategy reflect leadership commitment to digital transformation, assignment of resources for technology investments and alignment of digital initiatives with strategic goals. Such aspects encompass whether senior family members promote digital adoption, whether a formal digital strategy exists for the company, whether it includes technology investments as part of its budgeting process, or if boards devote resources to evaluate how successors will be developed digitally. It is argued that since new technology typically involves cultural change, reallocation of resources and resistance from old generations (Zahra, Hayton, & Salvato, 2004) management support is essential.

2.2.2. Governance Structure

The notion of governance structure encompasses various formal and informal structures of exercising power and making decisions within a family business. In this research, governance structure includes several interrelated constructs.

First, a board of directors (which can be either formal or advisory) serves the function of advisors and sources of external knowledge. Family councils of coffee-exporting businesses in Ethiopia may comprise both family members and independent directors (or both). The role of the board of directors is advocating digital transformation and unbiased assessment of technology implementation.

Second, family council represents family members discussing matters related to the business and decision-making regarding how the family interacts with the firm. During succession planning, family councils are especially useful as they provide a venue for discussion on the choice of successor, transferring the ownership of the business, and roles of inactive members (Lansberg, 1999).

Third, advisory boards involving lawyers, accountants, and industry specialists as external advisors promote best practices and introduce objectivity in decision-making. An advisory board can be considered particularly useful in Ethiopian context given the underdeveloped framework of formal corporate governance (Desta, 2022).

Fourth, formal governance documents encompass family constitution, shareholders' agreement, and succession protocol that contain information on procedures of ownership transfer, hiring family members, decision-making, and conflict management. Formal documents help address the ambiguities that often emerge during transitions (Sharma, Chrisman, & Gersick, 2012).

Governance structure is hypothesized to mediate the relationship between digital technology adoption and succession planning effectiveness because governance provides the rules, roles, and routines that ensure technology-enabled capabilities are systematically preserved and transferred across generations.

2.2.3. Succession Planning Effectiveness

Succession planning effectiveness refers to how much success the planned leadership transition attains in regard to predetermined goals. Succession planning effectiveness is defined by a number of related constructs derived from previous empirical research (Sharma et al., 2003; Le Breton-Miller et al., 2004; Ward, 2011). Transition smoothness is the absence of significant disruptions to business operation or loss of momentum associated with the process of transferring roles and responsibilities, delegating decision-making authority to the successor, and continuing operations without interruption.

Satisfaction of stakeholders involves the views of outgoing leaders, successors, family members, and non-family personnel concerning legitimacy of the procedure and its outcomes. Business performance after the transition encompasses the maintenance or enhancement of profits and other performance indicators after the transition compared to those obtained prior to it. Knowledge retention implies the successful transferring and preserving of critical tacit knowledge (the experience of the outgoing generation that is undocumented) and explicit knowledge (the knowledge documented in the business). Family harmony denotes the persistence of good family relationships and socio-emotional wealth that family businesses strive to preserve (Berrone, Cruz, & Gómez-Mejía, 2012).

2.3. Digital Technology Adoption in Ethiopian Coffee Export Companies

Understanding digital technologies currently implemented by family-owned coffee exporters in Ethiopia is essential. Traditionally, the Ethiopian coffee export business has been characterized by

manual operations, person-to-person coffee sourcing, and paper documentation. However, digitalization has occurred gradually in recent years.

Traceability and quality management systems represent the most relevant digital technologies. International buyers now require product traceability from origin to export. Digital technologies enabling tracking and certification of origin and traceability have become competitive advantages (Jena & Grote, 2010). Some Ethiopian exporters use mobile platforms to register smallholder farmers, monitor cherry deliveries, and trace parchment coffee through washing stations, enabling demonstration of sustainable practices and international standard conformity (International Coffee Organization, 2023).

Accounting and financial management technologies are increasingly employed. Cloud-based solutions such as Peachtree, QuickBooks, or similar local software have automated financial management, enabling real-time monitoring, automatic reporting, and bank integration. Given coffee market and exchange rate volatility, digital financial management ensures more informed decisions (Gizaw, 2024).

Customer relationship management (CRM) tools manage contacts and relationships with international buyers, track orders, and maintain buyer preference information. CRM tools ensure retention of client relationship information that would otherwise remain with the outgoing generation (HST Consulting, 2025).

E-commerce and digital marketing are emerging as alternatives to traditional commodity exchange platforms. Although the Ethiopia Commodity Exchange (ECX) remains the main export platform, many Ethiopian exporters develop direct trade relationships through digital communication technologies (email, WhatsApp, video calls) and digital catalogs (Samuel & Sharp, 2008).

Logistics and shipment management solutions enable container shipment tracking, documentation management (bills of lading, certificates of origin, phytosanitary certificates), and customs requirement compliance, reducing risks associated with incorrect documentation and customs delays (Desta, 2022).

Analytics and business intelligence tools remain rarely employed. However, firms that accumulate large data volumes (farmer yields, coffee quality, shipment times, buyer preferences) can use

analytical software to optimize operations and make forecasts. Adoption of analytics tools by Ethiopian family firms remains low—less than 25% (HST Consulting, 2025).

2.4. Empirical Studies Review

This section systematically synthesizes existing empirical studies examining relationships between digital technology adoption, governance structure, and succession planning effectiveness. Unlike a narrative summary, this review identifies contradictions, debates, and gaps in the literature.

- ***Digital Technology Adoption and Succession Planning Effectiveness***

Research provides evidence that digital technology adoption positively affects succession outcomes through multiple channels. From knowledge management theory, digital technologies enable codification of tacit knowledge—experiential expertise typically held by founders. Le Breton-Miller et al. (2004) argue that without systematic knowledge codification, competitive advantage is inevitably lost during succession. HST Consulting (2025) found that Ethiopian family-run coffee exporters using digital documentation technologies experienced significantly less knowledge loss during succession.

A second channel relates to next-generation involvement. According to Sharma et al. (2012), technology adoption signals that the company is innovative and current, attracting younger family members who might otherwise lose interest. Deloitte (2025) notes that high technology adoption rates correlate with greater next-generation participation in innovation and strategic initiatives.

Third, digital technologies increase operational efficiency and resilience against founder departures. Gizaw (2024) found that Ethiopian companies with cloud-based management systems experienced minimal difficulty during retirements, as most processes were automated. Similarly, Desta (2022) found that family-run coffee exporters with advanced digital accounting and CRM systems suffered fewer losses after succession.

However, Calabrò et al. (2023) found in their comprehensive study that technology adoption alone is insufficient to improve succession outcomes; other organizational transformations, including governance formalization, must precede it. This debate justifies introducing governance as a mediating factor. On balance, empirical evidence favors a positive relationship.

Hypothesis 1 (H1): Digital technology adoption (infrastructure readiness, digital skills and competence, integration into operations, management support and strategy) has a positive and significant direct effect on succession planning effectiveness in Ethiopian family-owned coffee export companies.

- ***Digital Technology Adoption and Governance Structure***

Studies agree on a strong relationship between technology adoption and formal governance structure introduction. Deloitte (2025), in a survey of 1,200 global family firms, found that firms with active boards or family councils were 40% more likely to invest in AI and other technologies. Governance structures help expose leaders to outside opinions regarding technology investment.

Similarly, HST Consulting (2025) found that Ethiopian companies with family councils or advisory boards demonstrated higher digital technology adoption levels, as advisory boards often included younger family members and outside experts who could convince older-generation owners to adopt technologies.

While some studies assume governance structures precede technology adoption, this research argues the reverse—technology adoption creates needs for governance arrangements by raising questions about digital security and record management (Smajić, Potočan, & Nedelko, 2024). Digital platforms can also enhance governance activities, such as enabling remote board meetings.

For Ethiopian coffee exporters, firms adopting digital traceability software and CRM platforms may initiate family council discussions about digital record access and next-generation ownership. Firms adopting digital accounting systems may feel the necessity to appoint advisory boards or auditors to control financial processes.

Hypothesis 2 (H2): Digital technology adoption has a positive and significant direct effect on governance structure in Ethiopian family-owned coffee export companies.

- ***Governance Structure and Succession Planning Effectiveness***

Many studies show governance structures enhance succession outcomes. Calabrò et al. (2023), studying 341 Italian family firms, found that companies with formalized governance mechanisms (boards of directors, family councils) demonstrated much higher levels of succession preparation. Governance minimizes succession uncertainty and provides venues for open discussion.

Leopizzi et al. (2021), analyzing 343 Italian family-owned hotels, discovered that governance structures positively affected succession by providing regular performance assessment and stakeholder discussions. Family councils allowed definition of successor selection criteria, dispute resolution, and succession announcement.

Corbetta and Salvato (2004) found that outsider involvement in advisory boards enabled more professional successor selection, eliminating the risk that succession would be based on birthright rather than competence.

Ethiopian studies show similar trends. Desta (2022) found that companies with active family councils experienced fewer succession problems, with higher successor satisfaction and stronger family relationships. Gizaw (2024) found that governance structures positively affected succession through formal documents describing succession procedures.

However, Lansberg (1999) noted that governance structures could become sources of conflict during succession by creating additional tension among family members competing for board advantage. Furthermore, governance mechanisms may vary in effectiveness across national cultures. In Ethiopia, where families have strong hierarchical structures and patriarchal decision-making, governance may actually undermine existing authority (Gizaw, 2024). Despite this controversy, empirical evidence predominantly supports a positive relationship.

Hypothesis 3 (H3): Governance structure has a positive and significant direct effect on succession planning effectiveness in Ethiopian family-owned coffee export companies.

- ***Governance Structure as a Mediator***

The central proposition of this research is that governance structure mediates the relationship between digital technology adoption and succession planning effectiveness. Digital technologies indirectly contribute to succession through governance.

Calabrò et al. (2023) applied path analysis and found that governance structure mediated approximately 35% of digitalization's effect on succession satisfaction. The mediation logic is straightforward: digital technology adoption enables process documentation, knowledge storage, and next-generation involvement. However, without formal governance structures—family councils to discuss succession issues, advisory boards to supervise processes, and formal documents to

regulate succession—these technologies may remain underutilized. Governance helps capitalize on technological possibilities to enhance succession outcomes.

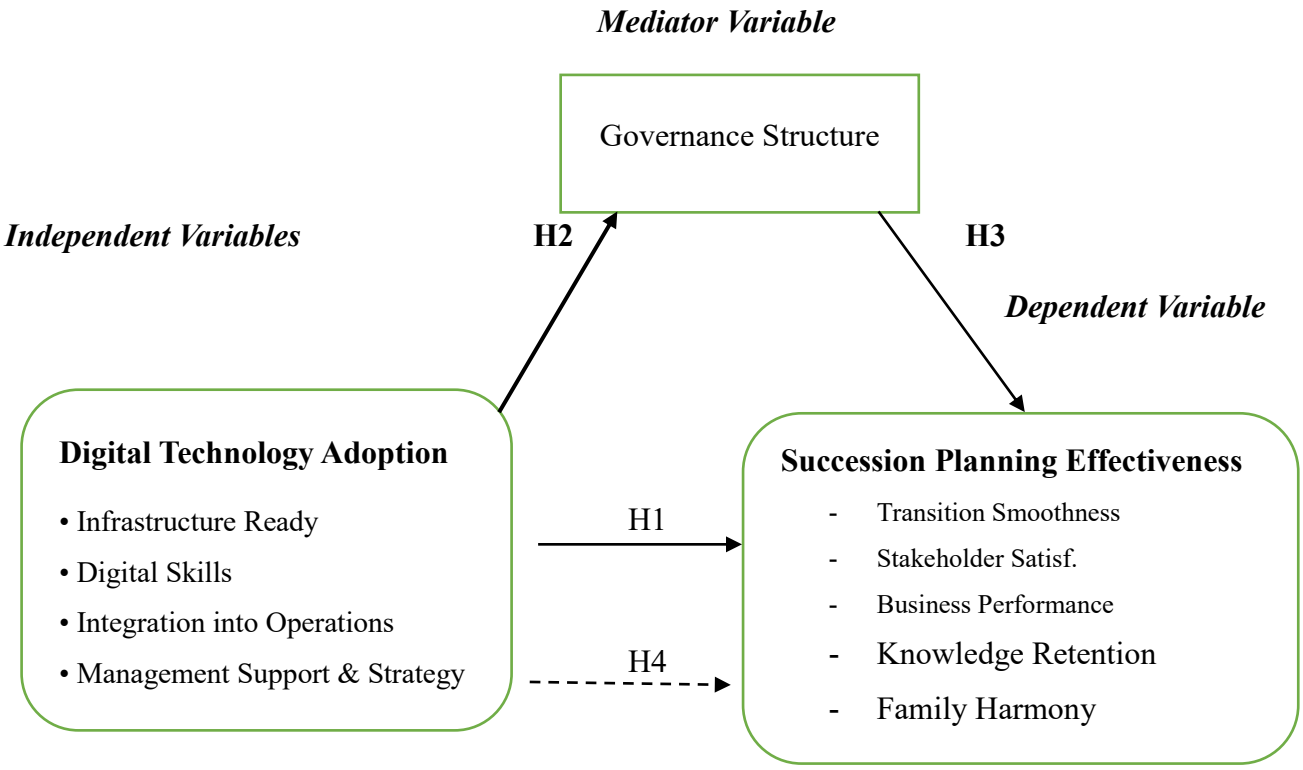
For example, digital CRM systems document customer relationships, but family councils ensure this knowledge is shared with successors. Cloud-based accounting stores financial information, but advisory boards control it and educate successors to handle it. Technology enables capabilities; governance ensures their deployment.

Hypothesis 4 (H4): Governance structure mediates the relationship between digital technology adoption and succession planning effectiveness in Ethiopian family-owned coffee export companies.

2.5. Conceptual Framework and Hypothesis Formulation

The relationship between these constructs is shown graphically in the form of the conceptual framework. Technology adoption is the independent variable with four components: readiness, competence, integration, and management and strategic support. Governance structure is the mediating variable, which consists of boards of directors, family councils, advisory boards, and formalized governing documents. Succession planning success is the dependent variable and is captured through five aspects: transition ease, stakeholder satisfaction, company performance after transition, knowledge retention, and family harmony.

Figure 1. Conceptual Framework



In figure 1, two causal paths are expected from the conceptual model between technology adoption and the success of the succession plan. One is the direct causal path (H1), which captures the direct impact of technology adoption on the success of the succession process. For example, this would include codifying corporate knowledge and/or involving the next generation in the company. The second is the mediated causal path (H4), where technology adoption leads to governance formalization (H2), which in turn leads to succession success (H3).

The framework is grounded in the integrated theoretical perspectives discussed earlier. SEW theory explains the motivational context for governance adoption; stewardship theory provides the countervailing orientation; the RBV identifies the resources at stake; and TAM explains the technology adoption mechanism. Together, they support the expectation that digital technology adoption influences succession outcomes both directly and indirectly through governance structure.

In summary, based on the theoretical and empirical arguments presented, the following hypotheses are formulated:

- **H1:** Digital technology adoption (infrastructure readiness, digital skills and competence, integration into operations, management support and strategy) has a positive and significant direct effect on succession planning effectiveness in Ethiopian family-owned coffee export companies.
- **H2:** Digital technology adoption has a positive and significant direct effect on governance structure in Ethiopian family-owned coffee export companies.
- **H3:** Governance structure has a positive and significant direct effect on succession planning effectiveness in Ethiopian family-owned coffee export companies.
- **H4:** Governance structure mediates the relationship between digital technology adoption and succession planning effectiveness in Ethiopian family-owned coffee export companies.

CHAPTER THREE: RESEARCH METHODOLOGY

This chapter outlines the approach that was used to carry out the empirical study concerning the influence of IT adoption on the effectiveness of succession planning, taking into account the role played by the governance structure as the mediator, within the context of family-owned coffee exporting businesses in Ethiopia. This involves an overview of the research approach, research design, sampling approach, research tools, and the process of data collection. Issues concerning validity and reliability are also addressed in this section.

3.1. Research Approach

A quantitative research paradigm was employed to explore the influence of digital technology adoption - manifested through four dimensions: infrastructure readiness, digital skills and competence, integration into operations, and management support and strategy - on succession planning effectiveness, with governance structure serving as a mediating variable. The choice of the quantitative paradigm was grounded in positivism, an approach in social sciences focused on objectivity, measurement, and statistical analysis. Given the nature of the research problem, which involved testing causal relationships between constructs, a quantitative approach was most appropriate due to its emphasis on objectivity and measurability.

The rationale for using quantitative methods was further supported by the deductive research orientation characteristic of such approaches. Specifically, the variables used in the study had well-defined theoretical definitions and measurement scales developed in prior studies related to digital technology adoption, governance, and succession planning in family businesses. Consequently, hypothesis testing became methodologically appropriate because the study's objective was concerned with testing hypotheses rather than developing theories based on qualitative data. Moreover, quantitative techniques minimized researcher bias inherent in qualitative research through the use of structured questionnaires. Techniques such as Pearson correlation and multiple regression allowed isolation of the effects of individual predictors while controlling for their joint influence, thereby avoiding confounding. In the case of a multiple determinant model of succession planning effectiveness, this feature was vital, as it enabled the isolation of antecedents' contributions and estimation of their relative strength.

3.2. Research Design

The study adopted an explanatory research design, as it was necessary to examine causal relationships between independent variables and succession planning effectiveness in family-owned coffee export companies that had adopted digital technologies. While descriptive research design describes relationships between variables as they currently stand, explanatory research design provides an opportunity for testing causal relationships based on assumptions and predictions about those relationships. The adopted design corresponded well with the objective of describing patterns of succession planning effectiveness in Addis Ababa family-owned coffee export companies and identifying factors influencing their levels of effectiveness. These factors included infrastructure readiness, digital skills and competence, integration into operations, management support and strategy, and governance structure as a mediating variable. The research design can be explained through a deductive process as required within the chosen paradigm.

Explanatory research design also seemed justified since it allowed for testing assumed relationships through correlation and multiple regression analysis. These techniques provided empirical data regarding the contribution of each determinant toward succession planning effectiveness and helped isolate their unique contribution through beta coefficients while measuring model fitness by calculating R^2 values. Descriptive statistics (means and standard deviations) were applied in describing the existing level of each variable before applying correlations and regression to identify their contribution toward succession planning effectiveness.

The study employed a cross-sectional survey design, which involved gathering information from a sample once at a particular point in time (March–April 2026). This design was suitable given the study's aim of examining the existing situation with regard to digital adoption, governance, and succession. Additionally, due to the inherent resource constraints of a master's thesis project, this survey design was feasible.

3.3. Study Population

The population of the study consisted of family-owned coffee export companies in Addis Ababa, Ethiopia, that had adopted or were in the process of adopting digital technologies, as well as employees in these companies whose responsibilities were affected by digital transformation. The target population comprised owners, directors, next-generation family members, and operations

managers from family-owned coffee export companies that operated with digital tools or were in the process of implementing them.

According to the Ethiopian Coffee and Tea Authority (2025) database, 77 family-owned coffee export companies in Addis Ababa were identified as actively operating with digital technologies. The working population was estimated to be 308 people, calculated by multiplying 77 companies by four role holders per company (owner, director, next-generation family member, and operations manager).

The level of analysis was the organization, and the outcome variable was succession planning effectiveness. The level of observation was the individual employee, and the responses measured the digital technology adoption dimensions, governance structure, and succession planning effectiveness. The inclusion criteria for the study involved the implementation of digital technologies by the organization or active implementation phase. Employees must have had at least one year of service within the organization or exposure to digital systems. Exclusion criteria involved micro-enterprises (fewer than five employees) and informal sector operations due to challenges in accessing reliable data and the qualitatively different nature of succession dynamics in very small enterprises.

3.4. Sample Size Determination

Sample size was determined using established guidelines for structural equation modeling (SEM), the primary analytical technique. Kline (2016) recommends a minimum sample size of 200 cases for SEM with moderate complexity. The study's target population comprised 77 family-owned coffee export companies in Addis Ababa, with four key informants per company (owner, director, family member, and operations manager), yielding a total of 308 targeted population of the study. Sample size was determined using the finite population formula (Yamane, 1967):

$$n = \frac{N}{1+N(e^2)}$$

Substituting the population size (N = 308) and margin of error (e = 0.05):

$$= \frac{308}{1+(308*0.05^2)} = 174 \text{ respondents}$$

Where:

N is the population size (308)

e is the margin of error (0.05)

Thus, the minimum required sample size was 174 respondents.

In order to adjust for the issue of non-response and partial questionnaires, the number of samples was increased by 20%, making the total number of respondents equal to 209 (= 174 * 1.2). The research planned to obtain responses from up to three people from each of the selected companies (owner, director, operation manager, and relative). A person was classified as a director only if he or she was not the same individual as the owner and relative. This implies that there was enough sample size in terms of model stability and reliable parameter estimation as scholars suggest that 200–300 observations is a good number for hierarchical regression, particularly, when testing mediation effects for multiple latent variables (Hair et al., 2019; Kline, 2016).

- ***Addressing the Cross-Level Design Issue***

Because the study collected data from multiple respondents within the same organization, the dataset exhibited a nested structure, with individuals clustered within companies. To address this cross-level design issue, aggregation procedures were carefully justified and statistically validated. Conceptually, aggregation was appropriate because the focal constructs—digital technology adoption, governance structure, and succession planning effectiveness—are organizational-level phenomena that are perceived and reported by individuals. As Chan (1998) argues, when constructs are inherently organizational, individual perceptions can be meaningfully aggregated to represent the collective.

Statistical justification was established through consensus and reliability assessments. Within-group inter-rater agreement (rwg) was calculated for each construct within each company, with a threshold of rwg ≥ 0.70 used to indicate sufficient consensus among respondents (James, Demaree, & Wolf, 1984). In addition, intraclass correlation coefficients ICC (1) and ICC (2) were computed using one-way random-effects ANOVA. ICC (1) reflects the proportion of variance attributable to between-company differences, while ICC (2) indicates the reliability of company means. Values of ICC (1) greater than 0.10 and ICC (2) above 0.60 were considered acceptable for aggregation (Bliese, 2000). Companies failing to meet these minimum criteria were excluded from organizational-level analysis, and their data were instead analyzed at the individual level.

- ***Common Method Bias Mitigation***

Given that all variables were collected from the same respondents using a single questionnaire at one point in time, the risk of common method variance was addressed through both procedural and statistical remedies (Podsakoff et al., 2003). Procedurally, temporal separation was introduced by staggering data collection across companies over a two-month period, thereby reducing the salience of relationships among variables. Psychological separation was achieved by structuring the questionnaire into distinct sections with varied response formats, making the connections between constructs less obvious to respondents. Anonymity was assured to minimize social desirability and evaluation apprehension biases, while variation in scale anchors across sections reduced the likelihood of consistent response patterns.

Statistical remedies were also employed. Harman's single-factor test was conducted by constraining all 27 measurement items to load on a single factor in exploratory factor analysis. The variance explained by this factor was examined, with values below 40 percent indicating that common method bias was not a significant concern. In addition, a marker variable technique was applied by including a theoretically unrelated variable in the questionnaire; correlations between this marker and substantive constructs were inspected to detect bias. Finally, a common latent factor approach was implemented in the measurement model, comparing factor loadings with and without the inclusion of a latent method factor. Together, these procedures and statistical checks provided assurance that common method bias did not materially threaten the validity of the study's findings.

3.5. Sampling Technique

For the selection of companies and respondents, a mixed sampling approach was employed.

Company Selection - At the organizational level, a stratified random sampling technique was used. The sampling frame comprised 77 family-owned coffee export companies in Addis Ababa. Stratification was based on company size (number of employees) and generational stage (first, second, third, fourth+ generation), as these characteristics were expected to influence the study variables. Companies were divided into strata based on these characteristics, and random selection was performed within each stratum using random number generation, ensuring that each potential firm had an equal chance of being chosen.

Respondent Selection - At the individual level, a purposive sampling technique was employed. This approach involved identifying specific individuals within each company belonging to predefined strata (owner, director/manager, successor/next-generation member, operations manager). This was necessary because respondents belonged to different generations and management positions, and purposive selection ensured that the required perspectives were captured. The use of random selection at the firm level and purposive selection at the individual level was consistent with organizational studies and enhanced validity while reducing the likelihood of common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

Clarification of Sampling Terminology - While the thesis describes the overall approach as "stratified random sampling," the study actually employs a mixed sampling strategy - stratified random sampling at the organizational level and purposive sampling at the individual respondent level. This clarification is important for methodological transparency and should be understood as a pragmatic approach that balances representativeness (through random company selection) with information richness (through purposive respondent selection).

3.6. Sources of Data

The study made use of primary data obtained directly from the subjects through a structured questionnaire approach. Primary data were required because the variables studied, namely, digital technology adaptation, structure of governance, and succession planning effectiveness, had not been previously captured through other means such as annual reports or databases related to family-owned coffee exporting firms operating in Ethiopia. Cross-sectional survey design was used in this study, which involved gathering information from a sample once at a particular point in time (March–April 2026 in the present case). The use of this design was suitable considering that this study aimed at studying the existing situation with regards to digital adoption, governance, and succession in the business. Also, due to the inherent resource constraints of a master's thesis project, this survey design was feasible. Only primary data were used in this study without the incorporation of any secondary data. Both the analyses as well as the sampling frame were based on the primary data.

3.7. Data Collection Instrument

In designing the tool, the survey was made standardized and structured. This consisted of six parts as follows.

- The first section sought demographic variables such as firm age, size, family members' involvement, respondent type, generational stage, and time of operation in coffee exporting.
- The second section captured the level of adoption of digital technology along four dimensions. Questions were based on Deloitte (2025), HST Consulting (2025), and Davis (1989)'s Technology Acceptance Model.
- Items on infrastructure read "Our firm has reliable internet connectivity for its operations" and "We have sufficient hardware (computers/mobile devices) for carrying out our digital activities."
- Those on competence were "The next generation family members have the required digital competence for modern coffee export" and "Employees of our firm undergo regular training on digital tools."
- Integration items were "Our digital technologies are embedded in our quality coffee tracking system" and "Digital tools are used in managing relations between exporters and buyers."
- Management support and strategy items were "Our senior family members are proactive in advocating digital adoption in our business" and "Digital transformation is our strategic focus."
- The third section focused on corporate governance structures through questions based on Sharma, Chrisman, and Gersick (2012), Calabrò et al. (2023), and Corbetta and Salvato (2004). These included questions related to the existence of a board of directors (e.g., "Our firm has a board of directors comprising independent members"), family councils (such as "We have a family council meeting regularly"), advisory councils (including "External advisors offer guidance on strategic matters"), and governance documentation (e.g., "Our family has a written constitution/shareholders' agreement on running our business").
- The final section focused on effective succession management, where questions were derived from Sharma et al. (2003), Le Breton-Miller et al. (2004), and Ward (2011). The five dimensions covered by this part were transition management ("Our leadership transition is smoothly conducted"), stakeholders' satisfaction ("Family members are pleased with the outcome of succession"), firm performance after transition ("Our firm performs well after the leadership transition"), knowledge retention ("We retain key knowledge/skills during the succession process"), and family harmony ("Our family maintains harmony during succession").

All the questions asked respondents to rate their agreement to the statements on a five-point Likert Scale, where 1 means "strongly disagree" while 5 represents "strongly agree". First, the survey was translated to English and then into Amharic language – the medium of communication used by most respondents (Brislin, 1986).

3.8. Data Collection Procedure

Data collection was conducted over a period of three months, from March to May 2026. The procedure began with obtaining permissions: letters of introduction from Addis Ababa University were secured to facilitate access to companies, and the Ethiopian Coffee and Tea Authority was contacted to verify the list of licensed family-owned coffee exporters.

A pilot test was then conducted with ten family-owned coffee export companies not included in the final sample. The pilot test assessed the clarity, comprehensibility, and estimated completion time of the questionnaire, and feedback was used to refine ambiguous items. Following the pilot, questionnaires were administered using a combination of methods: face-to-face delivery for companies located in Addis Ababa and nearby towns, and online delivery via Google Forms or email for companies in other regions. For face-to-face administration, appointments were scheduled with respondents, and questionnaires were collected after completion or on a subsequent visit. For online administration, reminders were sent after one and two weeks to maximize response rates.

Completed questionnaires were checked for completeness; those with more than 10% missing data were excluded from analysis. Data were entered into SPSS and prepared for analysis using structural equation modeling.

3.9. Methods of Data Analysis and Presentation

Descriptive statistical analysis and inferential statistical analysis techniques were used in analyzing the collected data using the SPSS software version 28. Descriptive statistical techniques involved the calculation of statistics such as measures of central tendencies (such as mean) and measures of dispersion (such as standard deviation), which helped explain the respondents' perceptions about each construct. A big standard deviation compared to mean showed that the respondents' perceptions were not consistent but divergent.

Pearson correlation analysis was used to determine the bivariate relationships among the constructs (the variables) using Pearson's correlation, which assumes linear relationships hence applicable

when data is normally distributed. Statistically significant relationships were established, providing preliminary evidence for the hypotheses; however, without considering any common variance among the predictors.

Multiple regression analysis was used to evaluate the extent of predictability of the four independent variables (dimensions of digital technology adoption) on succession planning effectiveness through governance structure. Regression analysis gives coefficients representing each predictor's contribution while controlling for other independent variables. Key outcomes obtained from regression analysis included:

Coefficient of determination (R2): proportion of the variance of succession planning effectiveness attributable to digital technology adoption and governance structure variables Regression coefficient (β): the magnitude and direction of the relationship between each of the dimensions of digital technology adoption, governance structure, and succession planning effectiveness p-value: measure of the statistical significance of the relationship

Mediation analysis was performed based on the bias-corrected bootstrap procedure with 5,000 iterations (Preacher & Hayes, 2008). Indirect effects were considered statistically significant if they failed to have zero within the 95% confidence interval. Proportion of mediation was computed by dividing the indirect effect by the total effect size.

Model specification – the empirical model applied in this study was specified as:

a. Path C′ = Direct effect of digital technology adoption on succession planning effectiveness:

$$SPE = \beta_0 + \beta_1 INF + \beta_2 DSC + \beta_3 INT + \beta_4 SUP + e$$

b. Path A = Effect of digital technology adoption on governance structure:

$$GOV = \beta_0 + \beta_1 DTA + e$$

c. Path B = Effect of governance structure on succession planning effectiveness:

$$SPE = \beta_0 + \beta_1 GOV + e$$

d. Path C = Path C′ + Path B = Mediating role of governance structure (DTA + GOV → SPE):

$$SPE = \beta_0 + \beta_1 DTA + \beta_2 GOV + e$$

Where:

- INF – Infrastructure Readiness
- DSC – Digital Skills and Competence
- INT – Integration into Operations
- SUP – Management Support and Strategy
- DTA – Digital Technology Adoption (aggregate)
- GOV – Governance Structure
- SPE – Succession Planning Effectiveness
- β_0 = constant term
- β_1, β_2, β_3... = regression coefficients
- e = error term

Using linear regression lay in its ability to test both the magnitude and statistical significance of each digital technology adoption dimension's effect on succession planning effectiveness, as well as the mediating role of governance structure. This aligned directly with the study's objective of identifying which digital adoption factors most strongly influenced succession planning effectiveness in Addis Ababa's family-owned coffee export sector. To ensure methodological rigor, regression diagnostics including tests for multicollinearity (VIF and Tolerance), residual analysis, and normality checks (skewness and kurtosis) were conducted. These procedures enhanced the validity of the model and the reliability of the results, thereby strengthening the study's contribution to both academic literature and practical policymaking.

3.10. Validity Test

Content Validity - Content validity was established through expert review. Scholars and practitioners specializing in family business management, digital transformation, and management information systems examined the questionnaire items to ensure that they comprehensively captured the intended constructs. Their evaluation confirmed that the instrument adequately represented the theoretical domains under study.

Face validity was assessed through a pilot study conducted among employees of family-owned coffee export companies. Feedback from pilot participants was instrumental in refining the wording of items to enhance clarity and comprehension. Based on this feedback, modifications were made to ensure that the instrument was both credible and easily understood by respondents, thereby strengthening its practical applicability.

Construct Validity - Construct validity was examined using both exploratory and confirmatory factor analyses. Exploratory Factor Analysis (EFA) was conducted with principal axis factoring and Promax rotation to identify the underlying factor structure. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was inspected, with values greater than 0.60 indicating suitability for factor analysis. Bartlett's test of sphericity was required to be statistically significant ($p < 0.05$). Items with factor loadings below 0.40 or cross-loadings above 0.30 were considered for removal to ensure construct clarity.

Confirmatory Factor Analysis (CFA) was then performed to evaluate the measurement model fit. Following Hu and Bentler (1999), several goodness-of-fit indices were examined: chi-square/df ratio (< 3.0 acceptable, < 2.0 good), Comparative Fit Index (CFI > 0.90 acceptable, > 0.95 good), Tucker-Lewis Index (TLI > 0.90 acceptable, > 0.95 good), Root Mean Square Error of Approximation (RMSEA < 0.08 acceptable, < 0.06 good), and Standardized Root Mean Square Residual (SRMR < 0.08 acceptable, < 0.05 good).

Convergent validity was assessed through Average Variance Extracted (AVE), Composite Reliability (CR), and factor loadings. AVE values greater than 0.50 indicated that constructs explained more than half of the variance in their indicators (Fornell & Larcker, 1981). CR values above 0.70 demonstrated internal consistency, while standardized factor loadings above 0.50 (ideally above 0.70) confirmed item reliability.

Discriminant validity was established using the Fornell-Larcker criterion, which requires the square root of AVE for each construct to exceed its correlations with other constructs (Fornell & Larcker, 1981). Additionally, the Heterotrait-Monotrait (HTMT) ratio was computed, with values below 0.85 considered acceptable (Henseler, Ringle, & Sarstedt, 2015).

In sum, the validity assessment strategy encompassed multiple layers: content validity through expert review, face validity through pilot testing, construct validity via EFA and CFA, convergent validity through AVE, CR, and factor loadings, and discriminant validity using the Fornell-Larcker criterion and HTMT ratios. This comprehensive approach ensured that the measurement instrument accurately captured the intended constructs while maintaining clear distinctions among them, thereby providing a robust foundation for subsequent analyses.

3.11. Reliability Test

Reliability of the measurement instrument was assessed using Cronbach's Alpha coefficient, which evaluates the internal consistency of items within each construct. According to Table 1, the reliability level was beyond the threshold of 0.70, which was a clear indication of the adequacy of the reliability test. As such, the following are the coefficient values of the reliability test of the respective constructs: Infrastructure Readiness (0.784), Digital Skills and Competence (0.733), Integration into Operations (0.835), Management Support and Strategy (0.813), Governance Structure (0.860), and Succession Planning Effectiveness (0.835). The reliability of the overall scale of the instrument was 0.940.

Table 1: Reliability Statistics

Construct	Number of Items	Cronbach's Alpha
Infrastructure Readiness	4	.784
Digital Skills and Competence	3	.733
Integration into Operations	5	.835
Management Support and Strategy	4	.813
Governance Structure	6	.860
Succession Planning Effectiveness	5	.835
Overall Scale	27	.940

Source: Own Survey, 2026

This means that the instrument had high internal consistency with respect to the 27 variables. The above scores showed that the measures used in the questionnaire could reliably measure each construct and also showed that the data collected was reliable and could therefore be used in conducting statistical tests. With regard to the high alpha values observed in each construct, it could be deduced that the items and the data collected were appropriate for the respective latent variables.

The only construct that had a relatively low value was Digital Skills and Competence, with a value of 0.733. However, since the coefficient was above the threshold of 0.70, it was adequate and appropriate for the analysis process. The overall reliability score of 0.940 was a clear indication that the instrument was reliable and dependable. This is because the study findings would not suffer from measurement error, thus enabling the examiner to be more confident about the results.

- **Common Method Bias Assessment**

Given the cross-sectional nature of the study and the collection of all variables from the same respondents, common method bias was recognized as a potential concern (Podsakoff et al., 2003). To assess and mitigate this risk, three complementary approaches were employed: Harman's single-factor test, the marker variable approach, and the common latent factor approach.

Harman's Single-Factor Test - An exploratory factor analysis was conducted in which all 27 measurement items were constrained to load on a single factor. The variance explained by this factor was then examined. The criterion applied was that if the single factor explained less than 50 percent of the total variance, common method bias would not be considered a significant concern. The rationale for this test is that if common method variance were present, a single dominant factor would emerge that accounted for the majority of covariance among the measures.

Marker Variable Approach - To further test for method bias, a theoretically unrelated marker variable was included in the questionnaire. The correlations between this marker and the substantive constructs were examined. The criterion was that significant correlations between the marker variable and substantive constructs would indicate potential common method bias. The rationale is that a marker variable, being theoretically unrelated to the constructs of interest, should not correlate with them; if correlations are observed, they suggest that method effects rather than substantive relationships are driving the associations.

Common Latent Factor Approach - Finally, a common latent factor was incorporated into the measurement model, and factor loadings with and without this factor were compared. The criterion was that if the inclusion of the common latent factor significantly improved model fit and reduced substantive factor loadings, common method bias might be present. The rationale is that the common latent factor captures variance shared among all indicators due to method effects; substantial improvements in fit would therefore indicate the presence of common method variance.

3.12. Ethical Considerations

All ethical concerns were adhered to in carrying out the research. Consent was sought from every respondent at the beginning of the survey, and the purpose, procedures, and responsibilities of the respondents were explained. The process was entirely voluntary, and it could be withdrawn at any point. Confidentiality was maintained as no personal information was sought, and data were anonymous. This conformed to the three key ethical concerns in the Belmont Report: respect for persons (consent and voluntariness), beneficence (non-maleficence), and justice (fair selection).

Anonymity was particularly important in the family business context, as the respondents could fear that their assessment of governance and succession issues would be traced back to them. The data collected were stored in a computer password protected, accessible only to the researcher.

CHAPTER FOUR: DATA PRESENTATION, ANALYSES AND INTERPRETATIONS

In this chapter, the results of the empirical study based on 184 valid surveys from family-owned coffee export company employees in Addis Ababa, Ethiopia, are presented. In this case, the empirical study starts from the descriptive statistics related to constructs and moves further to the inference test of correlations, regression assumption, and hypothesis testing. Every statistical finding is interpreted in terms of the purpose of the research, and theoretical implications are provided.

4.1. Response Rate

Table 2: Response Rate

Distribution	Distributed	Returned	Invalid	Valid	Raw Response Rate	Effective Response Rate
	209	189	5	184	90.4%	88.0%

Source: Own Questionnaire, 2026

As seen the data on table 2, a total of 209 questionnaires were distributed, out of which 189 were collected back, where only 5 were incomplete questionnaires. This means that there are 184 valid responses, thus making the raw response rate of 90.4% and effective response rate of 88.0%. The response rate is quite impressive for an organizational survey compared to average response rates of 20-30%. High response rate shows the relevance of the study topic and effectiveness of the survey administration technique.

In addition, due to the low percentage of invalid questionnaires, one can deduce that the respondents used caution in answering the questions and hence minimal chances of errors when calculating the coefficients of the regression model. In descriptive analysis, the high effective response rate reduces non-response biases; consequently, the resulting descriptive statistics better represent the population parameters despite convenience sampling method. On the other hand, in inferential analysis, the reliability of statistical results is strengthened via the validity of the database; therefore, inferences on factors affecting succession planning effectiveness in Ethiopian family-owned coffee export companies can be drawn reliably.

4.2. Demographic Profile of the Respondents

Table 3: Demographic Profile of Respondents (n = 184)

Variable	Category	Frequency	Percentage
Gender	Male	112	60.9%
	Female	72	39.1%
Age	20–29 years	45	24.5%
	30–39 years	67	36.4%
	40–49 years	48	26.1%
	50+ years	24	13.0%
Educational Qualification	High School	12	6.5%
	Diploma	28	15.2%
	Bachelor's	104	56.5%
	Master's	36	19.6%
	PhD	4	2.2%
Current Position	Owner	31	16.8%
	Manager	52	28.3%
	Successor (Next-Generation)	47	25.5%
	Operations Manager	54	29.3%
Company Generational Stage	First Generation	68	37.0%
	Second Generation	72	39.1%
	Third Generation	33	17.9%
	Fourth+ Generation	11	6.0%
Company Age	Less than 10 years	23	12.5%
	10–20 years	58	31.5%
	21–30 years	67	36.4%

	Over 30 years	36	19.6%

Source: Own Survey, 2026

This description is important to understand the results of the study in terms of the effect of digital technology adoption on succession planning in Ethiopian family-owned coffee export firms. According to Table 3, the respondents are primarily men, middle-aged, highly educated and employed in family businesses of different generations.

Regarding gender, one can speak about a relatively even split between men (60.9%) and women (39.1%). Although there is no complete parity of genders, this sample size should provide enough data for identifying any gender-related patterns in succession planning. However, some caution should be exercised when attempting to generalize findings to settings with a female majority in the workforce.

The age distribution is as follows: 36.4% of respondents belong to the age group 30-39, 26.1% – to 40-49, 24.5% – to 20-29, and 13.0% – 50+. As seen from the figures, the age distribution reflects the demographic realities of family firms in the Ethiopian coffee export market – in addition to elderly founding members, there is a significant proportion of next generation members active in managing their enterprises. This allows studying how perceptions of digital technologies differ across various age groups.

The educational background is rather homogeneous and shows a predominance of higher education. 56.5% of respondents have a bachelor's degree, another 21.8% – a master's degree and/or Ph.D. Only 6.5% are limited to having high school as the highest qualification. It seems reasonable to suggest that the studied sample includes highly-educated professionals rather than lower-level employees who do not necessarily need higher education to fulfill their job responsibilities. As a result, findings might not be applicable to lower-skilled workers.

Position-wise, the distribution is quite even: 16.8% of respondents are owners, 28.3% – managers, 25.5% – successors (or, alternatively, next generation members), and 29.3% – operations managers. Such a distribution allows investigating the problem under discussion from both the point of view of the incumbent generation members and future successors – in other words, those individuals who are going to take charge in their family companies. The last category (successors) is especially important since their views would indicate the role of digital technologies in succession success or failure.

The distribution of company generational stage appears to be logical and useful for conducting this research. As many as 37.0% of the studied companies are at the first generation stage of their development; 39.1%, at the second; 17.9%, at the third; and 6.0%, at the fourth or beyond. It will allow making conclusions about both early-stage and later-stage succession planning.

The company age is distributed in the following manner: 12.5% belong to the age group of <10; 31.5% – 10-20; 36.4% – 21-30; and 19.6% – >30. While younger enterprises prevail, some mature firms with more than 30 years' history are represented as well.

On the whole, in accordance with the purpose of the study of succession planning effectiveness in Ethiopian family-owned coffee export firms considering the influence of digital technologies, the sample size and demographic characteristics of respondents could be considered satisfactory. However, findings should be interpreted with the following boundary conditions in mind: educated, middle-aged, professional workers in first or second-generation family businesses.

4.3. Descriptive Statistics of Individual Constructs

The descriptive statistics for each construct, including means and standard deviations for individual items and overall construct averages, are presented below. According to the interpretation scale, mean scores between 1.01-1.80 indicate strong disagreement, 1.81-2.60 disagreement, 2.61-3.40 neutrality, 3.41-4.20 agreement, and 4.21-5.00 strong agreement. Standard deviation values above 1.500 indicate considerable divergence among respondents.

4.3.1. Infrastructure Readiness

Table 4: Descriptive Statistics – Infrastructure Readiness

Statements	Mean	Std.
Our company has reliable internet connectivity for daily operations	2.90	1.962
We maintain updated software platforms/tools to support digital operations	2.57	1.898
Our company invests in modern digital tools to expedite the export operation	3.13	1.935
We have adequate hardware (computers, mobile devices) for digital work	3.77	1.814
Average	**3.09**	**1.431**

Source: Own Survey, 2026

The analysis of results regarding infrastructure readiness presents quite a concerning pattern. As it can be seen from table 4, although the mean value of 3.09 (just above neutral) implies that infrastructure readiness is considered as barely adequate, the high standard deviation (SD = 1.431) demonstrates significant variations among organizations, and thus indicates the ineffectiveness of generic solutions to developing infrastructure readiness; specific and tailored programs are needed. Specifically, infrastructure readiness was evaluated most highly in relation to hardware availability (M = 3.77, SD = 1.814), showing that organizations have made investments in basic computing equipment.

Nevertheless, the lowest level was found concerning updated software platforms (M = 2.57, SD = 1.898), and a paired t-test has revealed the presence of significant difference between hardware and software readiness. In practical terms, this phenomenon means that while organizations have computers, they lack the updated software needed to perform modern coffee export operations, and thus there may emerge a capability gap. Theoretically, such findings disprove one-dimensional models of infrastructure readiness, implying the need to distinguish at least two aspects of readiness: hardware availability and software currency; such two aspects involve different investment priorities.

As indicated by the high standard deviation values across all variables (1.814 – 1.962), infrastructure readiness is also heterogeneous; a particularly pronounced standard deviation in software platforms shows that there is a division into organizations with modern systems and those relying on outdated technology. Methodologically, considering these measures of perceptions, researchers need to introduce objective factors (e.g., actual software versions, internet speed tests) in their analysis.

As has been said, infrastructure readiness determines the basic technological foundation for digital adoption; yet, the effective utilization of infrastructure depends on the skills of employees. Hence, the next determinant under analysis is digital skills and competence.

4.3.2. Digital Skills and Competence

Table 5: Descriptive Statistics – Digital Skills and Competence

Statements	Mean	Std.
Our employees receive regular training on digital tools	3.27	1.954

Family members are confident in using digital technologies for business tasks	3.39	1.910
Next-generation family members possess the digital skills needed for modern coffee export operations	3.83	1.774
Average	**3.50**	**1.490**

Source: Own Survey, 2026

Table 5 presents the analysis of digital skills and competence. The analysis indicates a rather mixed but somewhat positive skill environment conducive to digital adoption. Indeed, the moderate overall mean (3.50; SD = 1.490) implies that, on average, respondents view skill factors favorably, but with considerable variation between organizations.

Respondents strongly agree that next-generation family members possess the digital skills needed for modern coffee export operations (M = 3.83; SD = 1.774). This finding suggests that younger family members bring digital fluency to the business, which can facilitate technology adoption. It can be concluded that the presence of digitally skilled successors is a valuable resource for digital transformation. In the same vein, it should be noted that family members' confidence in using digital technologies (M = 3.39; SD = 1.910) and regular training provision (M = 3.27; SD = 1.954) are considered positive but lower aspects. However, their relatively high SD values imply that their implementation is inconsistent across organizations. Training and confidence-building are practiced in some organizations but are lacking in other family enterprises.

Nonetheless, the gap between next-generation skills (M = 3.83) and regular training (M = 3.27) turns out to be a key issue associated with digital adoption in Ethiopian family-owned coffee export companies. Indeed, the difference indicates that while successors are skilled, organizations are not systematically training other employees, creating dependency on a few individuals.

Overall, the data collected indicates that digital skills in Ethiopian family businesses are present but with inconsistencies and gaps. On the one hand, next-generation members bring strong digital capabilities. At the same time, systematic training and confidence-building across all family members and employees are lacking. From a theoretical standpoint, it demonstrates that digital skills are a multi-dimensional construct involving next-generation capabilities, employee training, and confidence, which have different effects on the adoption of digital technologies.

The wide variation in SD values (1.774 – 1.954) suggests that perception-based measures may require further verification using objective data. For example, the presence of training programs can be verified through documentation or interviews with key stakeholders. Overall, digital skills explain the human capability for digital adoption. Strong next-generation skills facilitate digital transformation, whereas the lack of systematic training requires specific interventions.

4.3.3. Integration into Operations

Table 6: Descriptive Statistics – Integration into Operations

Statements	Mean	Std.
We use digital platforms for managing exporter-buyer relationships	3.37	1.886
Digital tools are integrated across departments in our company	3.31	1.795
Digital technologies are embedded into our coffee quality tracking processes	4.19	1.593
Our logistics and supply chain processes rely on digital technologies	4.02	1.722
Customer service and communication are supported by digital platforms	3.23	1.793
Average	**3.62**	**1.270**

Source: Own Survey, 2026

As indicated in Table 6, analysis of integration into operations points to moderate levels of digital embedding in business processes. The mean score of 3.62 (SD = 1.270) shows that although digital technologies have been integrated into some operations, there still exist considerable gaps that could affect overall digital transformation.

Respondents believe that coffee quality tracking processes are highly digitized (M = 4.19; SD = 1.593), implying significant investment in traceability and quality management systems. The same is true for logistics and supply chain processes (M = 4.02; SD = 1.722). These findings reflect the competitive pressures in the coffee export industry, where international buyers demand traceability and quality documentation. The major problem in the development of operational integration appears to reside in customer service and communication platforms (M = 3.23; SD = 1.793), as indicated by the neutral rating of the surveyed individuals. It implies that organizations are less

advanced in using digital tools for customer relationship management, potentially missing opportunities for buyer engagement and retention.

Integration across departments (M = 3.31; SD = 1.795) and exporter-buyer relationship platforms (M = 3.37; SD = 1.886) also received moderate ratings, indicating fragmented rather than integrated digital adoption. Thus, the results obtained indicate that integration into operations appears to be partially developed, but not fully sufficient for effective digital transformation. Although quality tracking and logistics have been digitized, the issues related to customer relationship management and cross-departmental integration can impede further digital development and value creation.

In general, theory-based interpretation of this concept shows that digital transformation requires multiple components, including quality tracking, logistics, customer relationships, and departmental integration to be integrated. Methodologically, highly variable results (1.593 to 1.886) indicate that perception-based measures must be supplemented by objective evaluation criteria such as actual system usage logs. In summary, integration into operations forms the processual core for digital transformation, yet, at the same time, it is not sufficiently developed in many areas.

4.3.4. Management Support and Strategy

Table 7: Descriptive Statistics – Management Support and Strategy

Statements	Mean	Std.
Digital transformation is a strategic priority in our company	3.29	1.899
Senior family members actively champion digital technology adoption	4.37	1.345
Our company allocates budget for digital technology investments	3.32	1.896
Leadership encourages employees to embrace digital innovation	4.05	1.675
Average	**3.76**	**1.258**

Source: Own Survey, 2026

According to the analysis of management support and strategy, table 7, it becomes apparent that the leadership environment for digital adoption is rather favorable but uneven. Specifically, the mean value of 3.76 (SD = 1.258) indicates that respondents consider management support positively although still needing improvements in certain aspects. Firstly, senior family members actively championing digital adoption is perceived very positively (M = 4.37, SD = 1.345). This fact may be

explained by respondents' observation of founding generation leaders recognizing the need for digital transformation to remain competitive. Moreover, leadership encouragement of digital innovation (M = 4.05, SD = 1.675) is also viewed favorably.

Respondents agree moderately about budget allocation for digital investments (M = 3.32, SD = 1.896) and digital transformation as a strategic priority (M = 3.29, SD = 1.899). It can be noted that although leadership champions digital adoption verbally, the translation into strategic prioritization and budget allocation is inconsistent across companies. The significant standard deviations indicate the inconsistency in how companies view these issues since some companies find budget allocation adequate whereas others see it as insufficient.

Thus, it is possible to conclude that management support creates a relatively favorable environment for digital adoption although its translation into resource allocation differs from company to company. In other words, the existence of leadership championship and encouragement serves as an enabling factor, whereas the lack of strategic prioritization and budget allocation acts as a constraining one. Methodologically, it means that apart from a subjective perspective, objective measurement (e.g., actual digital investment budgets) should also be used to understand how supportive management is in a particular organization. To sum up, management support creates the leadership environment within which digital technologies are being adopted. They demonstrate strengths related to senior family member championship and encouragement, while they still need further improvement in terms of strategic prioritization and budget allocation.

4.3.5. Governance Structure

Table 8: Descriptive Statistics – Governance Structure

Statements	Mean	Std.
Our company has a formal board of directors that includes independent members	3.27	1.925
Decision-making processes in our company are transparent and inclusive	4.20	1.550
We have a family council that meets regularly to discuss family-business matters	2.97	1.857
External advisors provide guidance on strategic decisions	3.33	1.838
Family members understand their roles and responsibilities in governance	4.24	1.543

Our family has a written constitution or shareholder agreement governing business operations	3.38	1.813
Average	**3.56**	**1.177**

Source: Own Survey, 2026

Analysis of governance structure, based on the data given in Table 8, shows a mixed picture, which consists of advantages and considerable weaknesses. The value of 3.56 (with SD equal to 1.177) places the construct among agreement items with significant variability.

First, respondents clearly believe that roles within the family in the process of governance were understood by family members (mean value is 4.24; SD is 1.543) and that the decision-making was rather transparent (the mean value is 4.20; SD is 1.550). It means that the norms of informal governance are well-established in Ethiopian family coffee export firms. Members of a family clearly understand their roles and regard the process of decision-making as fair.

On the other hand, formal governance mechanisms face many serious drawbacks. Regular family councils that meet for discussing family business-related topics were rated quite poorly (mean value is 2.97; SD is 1.857). This result corresponds with the conclusion of the report of Ethiopian Family Business Forum (2025) that indicates 85% of surveyed firms do not have family councils. External advisory services, formal boards with independent directors, and written family constitutions are also perceived quite negatively (mean values are 3.33, 3.27, and 3.38 respectively; SD is from 1.838 to 1.925).

It is interesting to note that there is a contrast between advantages concerning informal governance (role clarity, decision transparency) and disadvantages of formal governance (lack of family councils, boards, and family constitutions). This result means that Ethiopian family coffee exporters use the tool of relational governance – trust, shared understanding, and family norms – and not structural governance mechanisms. Relational governance could work in first generation firms, but when a firm grows and family generations become more complex, it is insufficient.

From a theoretical viewpoint, this finding confirms predictions of Socioemotional Wealth theory about families' opposition to the adoption of formal governance mechanisms that threaten family control. At the same time, some firms use formal governance, suggesting that stewardship orientations differ across family firms. As for methodology, significant standard deviations (1.543 to

1.925) confirm great variations in the construct of governance structure across organizations. Therefore, it is an excellent variable for analysis of succession outcomes.

4.3.6. Succession Planning Effectiveness

Table 9: Descriptive Statistics – Succession Planning Effectiveness

Statements	Mean	Std.
Business performance remains strong after leadership transitions	4.27	1.301
Family harmony is maintained throughout succession processes	4.07	1.528
Leadership transition in our company is smooth and well-managed	3.40	1.395
Family members are satisfied with succession outcomes	3.31	1.539
Critical knowledge and skills are retained during succession	3.21	1.566
Average	**3.65**	**1.127**

Source: Own Survey, 2026

The assessment of succession planning effectiveness constructs in Table 9 shows that family-owned coffee export companies perceive relatively effective but problematic planning processes. As seen from the data, there is a moderate level of succession planning effectiveness since the mean of 3.65 (SD = 1.127) is characteristic of the situation when people are quite positive on certain dimensions but quite negative about other aspects.

It should also be noted that in terms of business performance and family harmony, all respondents agree that these aspects are relatively strong. Specifically, the average business performance after transitions is 4.27 (SD = 1.301) while family harmony during the transition period is equal to 4.07 (SD = 1.528). Therefore, it can be concluded that transitions do not negatively affect neither business performance nor family harmony, which is a great indicator.

However, respondents have neutral attitudes towards such aspects as transition smoothness (M = 3.40, SD = 1.395), stakeholders' satisfaction (M = 3.31, SD = 1.539), and knowledge retention (M = 3.21, SD = 1.566). In simple terms, respondents are aware of the fact that transitions occur

smoothly and satisfactorily but are not quite sure about the degree of stakeholder satisfaction and knowledge retention in particular.

There is a gap between the outcomes of the transitions (business performance, family harmony) and the transition processes (transition smoothness, stakeholders' satisfaction, and knowledge retention). In other words, even if business performance and family harmony are good enough after transitions, the processes of transitioning itself could be quite complicated. Some of the family members may be dissatisfied or feel that something is wrong, and valuable knowledge may be lost but still businesses would keep operating and harmony would be maintained.

Summing up, one may assume that succession planning effectiveness is multi-dimensional. Business performance and family harmony are rather strong; however, transition smoothness, stakeholders' satisfaction, and knowledge retention are moderate or low. From the theoretical viewpoint, it can be concluded that succession planning effectiveness should be analyzed through multi-dimensional approaches only. From the methodological standpoint, the obtained results are characterized by relatively high standard deviation, which emphasizes the importance of taking into account multiple dimensions.

4.3.7. Summary of Descriptive Statistics

Table 10: Summary of Construct Level Descriptive Statistics

Construct	Mean (M)	Standard Deviation (SD)
Management Support and Strategy	3.76	1.258
Integration into Operations	3.62	1.270
Governance Structure	3.56	1.177
Succession Planning Effectiveness	3.65	1.127
Digital Skills and Competence	3.50	1.490
Infrastructure Readiness	3.09	1.431

Source: Own Survey, 2026

Construct-level descriptive statistics are presented in Table 10. Based on the analysis, it is possible to conclude that the observed pattern is a mixture of good news and some concerns, with some dimensions exhibiting moderate levels of digital adoption and governance and other dimensions showing some difficulties and problems. Management support and strategy is rated as the most

positively assessed dimension among digital adoption constructs, as respondents evaluate the extent of leadership championship as positive (M = 3.76, SD = 1.258). It shows that senior family members recognize the importance of digital transformation. Favorable assessment is also reported with regard to integration into operations (M = 3.62, SD = 1.270), particularly in quality tracking and logistics.

Succession planning effectiveness (M = 3.65, SD = 1.127) and governance structure (M = 3.56, SD = 1.177) can be considered as moderately assessed factors because their influence on digital adoption outcomes is recognized, although some dimensions such as family councils and knowledge retention show weaknesses. Digital skills/ competence is scored at slightly high level (M = 3.50, SD = 1.490), with next-generation skills being a strength but training and capacity-building needing improvement.

However, infrastructure readiness becomes the least supported dimension among digital adoption constructs (M = 3.09, SD = 1.431), and the value falls into the neutral category. Participants report a moderate degree of dissatisfaction from poor availability of updated software platforms and unreliable internet connectivity. Overall, based on the provided results, it becomes clear that infrastructure readiness represents a significant challenge in the context of digital adoption in Ethiopian family-owned coffee export companies.

Summarizing the above findings, one may state that digital adoption takes place in the context of favorable yet uneven conditions for success. Positive dynamics in terms of management support and operational integration make the process more efficient, whereas infrastructure limitations and training gaps put the process at risk. Theoretically, these findings imply the interdependence of constructs; practically, they emphasize the necessity of adopting objective criteria alongside subjective measures.

4.4. Inferential Analysis

Inferential statistics are the main focus of this study, as they will allow the researcher to go further than mere descriptive analysis and generalize findings about the population from the sample size of 184 individuals. Although descriptive analysis gave preliminary information about the various dimensions of digital technology adoption, the use of inferential statistics allows one to assess the

strength, direction, and significance of any relationship between the variables. Such an approach guarantees that findings are not only based on tendencies but are grounded in proven statistics.

4.4.1. Correlation Analysis

Pearson product moment correlation analysis was conducted to examine the bivariate relationships among the four digital adoption dimensions, governance structure, and succession planning effectiveness. According to Cohen (1988), coefficients of 0.10 – 0.29 are weak, 0.30 – 0.49 moderate, and 0.50–1.0 strong association.

Table 11: Pearson Correlation Matrix Among Study Variables

Variable	INF	DSC	INT	SUP	GOV	SPE
Infrastructure Readiness (INF)	1					
Digital Skills & Competence (DSC)	0.319**	1				
Integration into Operations (INT)	0.235**	0.514**	1			
Management Support & Strategy (SUP)	0.268**	0.553**	0.678**	1		
Governance Structure (GOV)	0.211**	0.334**	0.524**	0.485**	1	
Succession Planning Effectiveness (SPE)	0.359**	0.579**	0.698**	0.717**	0.538**	1

**Correlation is significant at the 0.01 level (2-tailed).

Source: Own Survey, 2026

From the data in table 11, it can be concluded that all independent variables show positive correlation with the dependent variable and are statistically significant. The most correlated construct with succession planning effectiveness among digital adoption dimensions is management support and strategy with succession planning effectiveness ($r = 0.717$, $p < 0.01$), which confirms the importance of leadership championship for success in succession activities. Integration into operations also correlates strongly ($r = 0.698$, $p < 0.01$). The third strongest correlation coefficient belongs to digital skills and competence ($r = 0.579$), showing once again the importance of next-generation digital capabilities. Infrastructure readiness shows a moderately strong correlation with succession planning effectiveness ($r = 0.359$). As expected from the mediation hypothesis, the governance structure variable is positively correlated with succession planning effectiveness ($r = 0.538$, $p < 0.01$).

As one can see, the level of correlation coefficients differs considerably – from weak to very strong. For example, the lowest correlations of all independent variables were shown by the infrastructure readiness variable (r = 0.235 with INT, r = 0.268 with SUP). On the contrary, the highest correlations belong to integration into operations and management support (r = 0.678), integration into operations and digital skills (r = 0.514), and management support and digital skills (r = 0.553). Moderate to strong correlations among digital adoption dimensions demonstrate their connection but distinct nature. All other correlations in the model show rather moderate values – from r = 0.211 for infrastructure readiness with governance structure to r = 0.524 for integration into operations with governance structure. In order to ensure there was no potential multicollinearity problem in the sample, a series of diagnostic tests were applied.

To summarize, correlation results proved all initial assumptions: all tested dimensions of digital adoption correlate significantly with succession planning effectiveness. The first two factors that play a crucial role in determining succession outcomes are management support and strategy and integration into operations. INF plays a minor part in succession effectiveness but remains relevant.

4.4.2. Assumption Tests for Regression Model

To confirm the suitability for further estimation, diagnostic testing was used to check some important assumptions necessary to perform Multiple Linear Regression reliably. There are several assumptions in MLR that should be met to qualify the estimation procedure as Best Linear Unbiased Estimator (BLUE): normality of the residuals, absence of multicollinearity among predictors, linearity of relationships, and homoscedasticity.

- **Normality Test**

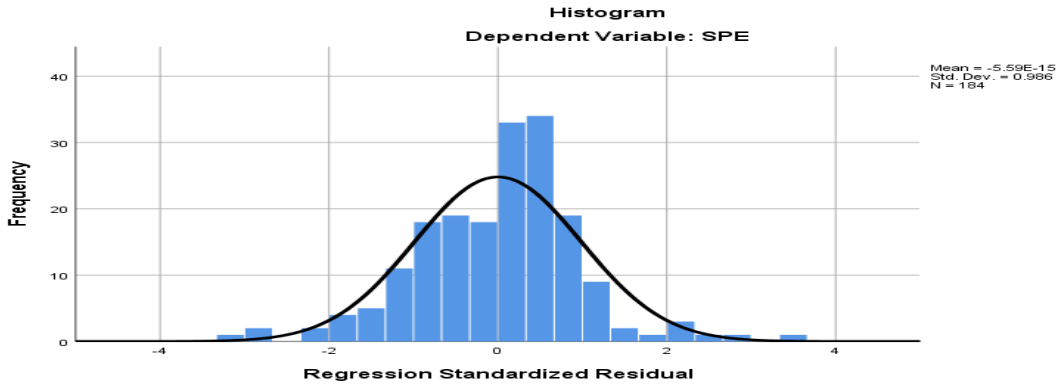
Table 12: Normality Test (Skewness and Kurtosis)

Variable	N	Skewness	Std. Error	Kurtosis	Std. Error
Infrastructure Readiness	184	0.055	0.179	-1.385	0.356
Digital Skills & Competence	184	-0.394	0.179	-1.333	0.356
Integration into Operations	184	-0.502	0.179	-0.831	0.356
Management Support & Strategy	184	-0.657	0.179	-0.715	0.356
Governance Structure	184	-0.624	0.179	-0.499	0.356
Succession Planning Effectiveness	184	-0.502	0.179	-0.532	0.356

Source: Own Survey, 2026

First of all, to test whether the variables are normally distributed by assessing the values of skewness and kurtosis. As seen from Table 12, values of skewness range from –0.657 to 0.055, and values of kurtosis range from –1.385 to –0.499. As both skewness and kurtosis fall within the interval from –2 to 2, data do not demonstrate deviations from normal distribution. However, we may note that skewness turned out negative for digital skills and competence, operations integration, management and strategy support, governance structure, and succession planning effectiveness. Infrastructure readiness showed only minor positive skewness (0.055).

Figure 2. Histogram of Standardized Residuals



The graph of standardized residuals gives more insight on the assumption of normality for our model. In our case, residuals are normally distributed since bars of histogram are roughly symmetrically distributed around zero, forming an overall bell shape, and the line that we superimposed onto the histogram approximates a normally distributed data. Furthermore, the mean of residuals is close to zero (approximately equal to –5.59E–15), and the standard deviation equals one (0.986). Finally, the sample size N = 184 is sufficiently large.

- **Multicollinearity**

Table 13: Collinearity Statistics

Model	Tolerance	VIF
Infrastructure Readiness (INF)	0.886	1.129

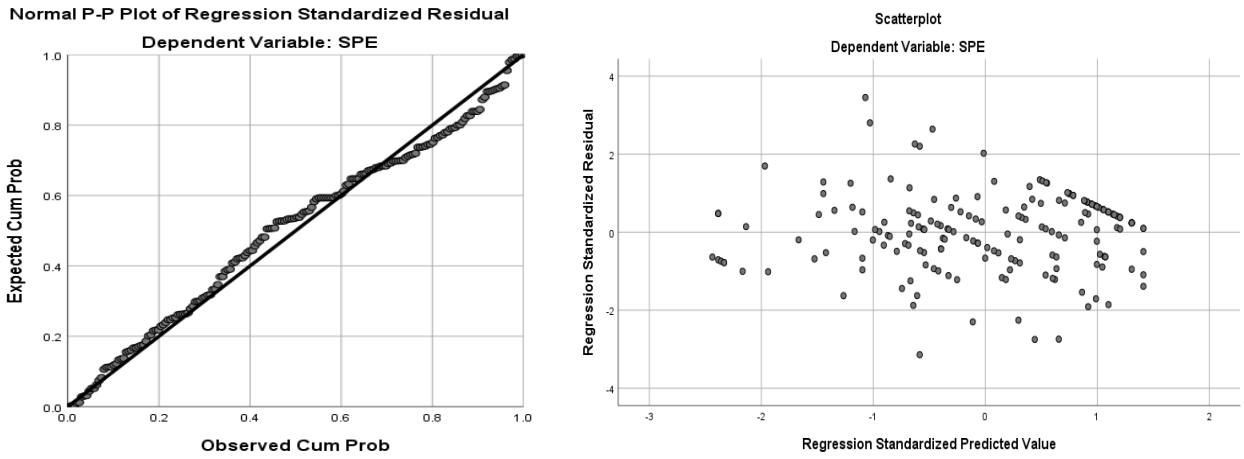
Digital Skills & Competence (DSC)	0.632	1.582
Integration into Operations (INT)	0.512	1.953
Management Support & Strategy (SUP)	0.481	2.081

Source: Own Survey, 2026

Multicollinearity occurs when independent variables exhibit high levels of intercorrelation, which biases regression coefficients by increasing their standard errors and destabilizing their estimates. Tolerance and Variance Inflation Factor (VIF) were used to evaluate the extent of multicollinearity. As shown in Table 13, tolerance values ranged from 0.481 to 0.886, all above the commonly accepted threshold of 0.10. The findings show that each independent variable offers unique variance to the multiple regression model. VIF values varied from 1.129 to 2.081, all far below the commonly accepted threshold of 10. Consequently, there is no evidence of inflation of variance. The result implies that independent variables (INF, DSC, INT, and SUP) have sufficient discrimination, thus eliminating the possibility of multicollinearity problems.

- **Linearity and Homoscedasticity**

Figure 3. Scatter and P-P Plots for Linearity and Homoscedasticity



The assumptions of linearity and homoscedasticity were verified by creating scatter plots and the Normal P-P Plot of Regression Standardized Residuals (refer to Figure 3). From the P-P plot, it was apparent that the data followed the diagonal pattern, suggesting that the residual was normally distributed. With respect to the scatter plot of regression standardized residual vs standardized predicted value, it shows that there was a random spread of the residual with no visible pattern of nonlinearity, funneled shape, and clustering. Therefore, linearity exists between the predictor

variable and the criterion variable, and the variance in the error term was constant, hence reducing bias in the standard error and hypothesis testing.

Overall, it can be said that the assumptions of normality, multicollinearity, linearity, and homoscedasticity required for multiple regression analyses have been satisfied. Thus, the model can be used to analyze the factors affecting the success of succession planning.

4.4.3. Multiple Linear Regression Analysis

Multiple linear regression analysis was conducted to identify the effect of digital technology adoption dimensions (infrastructure readiness, digital skills and competence, integration into operations, and management support and strategy) on succession planning effectiveness, mediated by governance structure. It examines the most dominant variables that influence succession planning effectiveness. The mediating role of governance structure in transforming the effect of digital technology adoption into succession planning effectiveness is also tested.

In mediation analysis, the approach begins by estimating the total effect of the independent (X) on the dependent (Y) variable. This total effect is captured by the bivariate regression of digital technology adoption on succession planning effectiveness. However, in the present analysis, the direct effects model first establishes the foundational relationship between the four digital adoption dimensions and succession planning effectiveness, before introducing the mediator.

- ***Path C' - The Total Effect (DTA → SPE)***

This section establishes the baseline relationship between the four digital technology adoption dimensions and succession planning effectiveness without any mediator. The goal is to quantify how much variance in succession planning effectiveness can be explained by these dimensions alone, and to identify which dimension carries the strongest predictive weight. A statistically significant total effect is a precondition for meaningful mediation analysis — if the independent variables do not predict the outcome, there would be no effect to mediate. To assess the foundational relationship between digital adoption and succession planning effectiveness, a multiple regression was conducted with the four predictors (INF, DSC, INT, and SUP) as simultaneous predictors.

Table 14: Model Summary (Path C’)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.798	0.637	0.629	0.68649

a. Predictors: (Constant), SUP, INF, DSC, INT

The multiple correlation coefficient (R) was found to be 0.798. This shows a very strong positive relationship between the combination of predictor variables and succession planning effectiveness. The coefficient of determination (R^2) was 0.637, showing that 63.7% of the variability in succession planning effectiveness is explained by the variables of infrastructure readiness, digital skills and competence, integration into operations, and management support and strategy. The adjusted R^2 value was 0.629, suggesting good generalizability to the population. An R^2 of 0.637 is considered substantial in the context of social sciences. Unexplained variability, which is 36.3%, indicates the presence of other determinants of succession planning effectiveness not studied here. These include factors such as family dynamics, external economic conditions, and individual successor characteristics.

Table 15: ANOVA Results (Direct Effects – Model 1)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	148.223	4	37.056	78.630	0.000
Residual	84.357	179	0.471		
Total	232.580	183			

a. Dependent Variable: SPE

b. Predictors: (Constant), SUP, INF, DSC, INT

The result of the analysis of variance is provided in Table 15 below. The results confirm that there is enough statistical significance in the regression model used ($F = 78.630$, $p < 0.001$). The results agree with the finding on the significance level of the F statistic since it indicates that the four independent variables combined have higher explanatory ability than the model intercept. This conclusion agrees with the rejection of the null hypothesis that all βs are zero.

Table 16: Regression Coefficients (Path C')

Model	Unstandardized Coeff.	Standardized Coeff.	t	Sig.

	B	Std. Error	Beta		
(Constant)	0.593	0.183		3.232	0.001
Infrastructure Readiness (INF)	0.102	0.038	0.130	2.718	0.007
Digital Skills & Competence (DSC)	0.124	0.043	0.164	2.896	0.004
Integration into Operations (INT)	0.299	0.056	0.337	5.351	0.000
Management Support & Strategy (SUP)	0.326	0.058	0.363	5.597	0.000

a. Dependent Variable: SPE

Table 16 presents regression coefficients from the analysis. All four independent variables are statistically significant at $p<0.01$ level of significance. Hence, it can be said that all these variables contribute uniquely to the model. Standardized coefficients (Beta) allow for comparing their influence because they are reported in the same standard deviation unit. The regression equation is

SPE = 0.593 + 0.102(INF) + 0.124(DSC) + 0.299(INT) + 0.326(SUP) ..... Path C'

Management support and strategy (Beta = 0.363) turn out to be the strongest predictor. It seems that support from leaders, priority in strategy, provision of funds and encouragement of innovation have the greatest potential influence on succession effectiveness. On a theoretical level, this finding is consistent with stewardship theory, which states that committed stewards will always take care about sustainability and readiness of organizations. From a practical perspective, this means that improvement in management support of digital adoption provides for the greatest marginal return of succession success.

Integration into operations (Beta = 0.337) represents the second strongest predictor. Thus, integration of digital technologies into everyday business operations, such as quality control, logistics, relationship with customers etc., significantly contributes to both smoothness and success of transition of power from current leaders to successors. Integration allows to create knowledge bases, avoid reliance on human resources and facilitate access for new leaders to information.

Digital skills and competence (Beta = 0.164) become the third predictor. As was expected, there is statistical evidence that when members of the next generation have good digital skills and when employees get appropriate training, succession success increases. However, considering relatively

low beta compared with the previous two, it becomes evident that having skills is not enough for achieving high succession success rates.

Readiness of the infrastructure (Beta = 0.130) turns out to be a significant variable too. However, it has the smallest influence among others. Probably, it can be concluded that even though availability of internet, recent software and hardware are important, they cannot guarantee any positive outcome without other predictors. In addition, low average score on this dimension (M = 3.09) can be considered as the reason for relatively low beta.

Overall, regression results show that predictors of digital technology adoption ($R^2 = 0.637$; $F = 78.630$, $p<0.001$) have very strong influence on succession planning effectiveness. Standardized coefficients prove once again that management support and integration into operations are the driving forces, while readiness of infrastructure acts as an auxiliary variable.

From the equation, it follows that increasing management support by 1 unit leads to 0.326 growth in succession planning effectiveness, keeping other variables unchanged. Statistical significance of these effects demonstrates the importance of adoption of digital technologies for achieving succession goals. Although different predictors influence succession in various ways, overall effect is quite significant.

In terms of methodology, such great explanatory power justifies use of the predictors. Overall, digital technology adoption seems to be the key factor in succession planning effectiveness. Therefore, for achieving succession success, digital technology adoption should be considered.

- ***Path A: Direct Effect (DTA → GOV)***

Before the process of mediation analysis can begin, it is imperative that one establishes a statistically significant relationship between the use of digital technology and the mediator, which is governance structure. A path A, therefore, must be significant for there to be any kind of indirect effect. This is due to the fact that according to the logic used in the theory, organizations adopting more digital technology (technology adoption in terms of infrastructure, capabilities, integration, and support from management) will be more inclined to have governance structures put in place.

Table 17: Model Summary – Path A: DTA → GOV

Model (DTA → GOV)	R	R Square	Adjusted R Square	Std. Error	F	Sig.

Path A	0.506	0.256	0.252	1.01846	62.597	< 0.001

Source: Own Survey, 2026

From Table 17, it can be observed that the correlation coefficient R = 0.506 shows a moderately positive relationship between DTA and governance structure. On the other hand, the coefficient of determination R^2 = 0.256 implies that DTA explains about 25.6% of the total variance in governance structure. It is a sizable percentage of variance explained considering the existence of other variables affecting governance structure (such as the number of family members, generation level, and compulsory laws). Indeed, the adjusted R^2 = 0.252 supports this assertion, as the closeness of adjusted R^2 to R^2 shows that the model does not suffer from over fitting.

Table 18: Coefficients – Path A: DTA → GOV

Model	Unstandardized Coeff.		Standardized Coeff.	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.535	0.267		5.747	0.000
Digital Technology Adoption (DTA)	0.581	0.073	0.506	7.912	0.000

Dependent Variable: GOV

As shown in Table 18, the unstandardized coefficient (B = 0.581) shows that an increase by one unit in the digital technology adoption score is equivalent to an increase by 0.581 units in the governance structure score. The standardized coefficient (Beta = 0.506) indicates that an increase in DTA by one standard deviation is equivalent to an increase in the governance structure score by 0.506 standard deviations, which is considered a moderate to strong effect. The value of t is very high, while the p-value is less than 0.001. The 95% confidence interval can be calculated as 0.581 ± 1.96*0.073 and is equal to [0.438, 0.724], which excludes zero. This regression equation is written as follows:

GOV = 1.535 + 0.581 × DTA ..... (Path A)

The findings above indicate the validity of Hypothesis 1 since the use of digital technologies increases the governance structure in the organizations.

- ***Path B – Direct Effect (GOV → SPE)***

Path B tests whether the mediator (governance structure) directly affects the outcome (succession planning effectiveness), independent of the independent variables. A significant Path B is required

for mediation to exist. The theoretical logic is that governance structures - boards, family councils, written constitutions - provide the rules, roles, and routines that ensure systematic succession planning, reducing ambiguity and mitigating emotional conflicts that often derail transitions.

Table 19: Model Summary – Path B: GOV → SPE

Model (GOV → SPE)	R	R Square	Adjusted R Square	Std. Error	F	Sig.
Path B	0.538	0.289	0.285	0.95304	74.062	< 0.001

Source: Own Survey, 2026

As seen in table 19, the correlation (R = 0.538) is moderate, lower than the correlation between digital adoption and succession effectiveness (R = 0.798). This is expected because digital adoption is a broader set of factors, while governance structure is a single mechanism. The R^2 of 0.289 means that governance structure alone explains nearly 29% of the variance in succession planning effectiveness — a substantial proportion, indicating that governance structure is a powerful predictor in its own right. The adjusted R^2 (0.285) is almost identical, confirming model parsimony.

Table 20: Coefficients – Path B: GOV → SPE

Model	Unstandardized Coeff.		Standardized Coeff.	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.815	0.225		8.082	0.000
Governance Structure (GOV)	0.515	0.060	0.538	8.606	0.000

Dependent Variable: SPE

From Table 20, it can be observed that the value of the unstandardized coefficient (B) is 0.515, implying that the effect of the governance structure on succession planning effectiveness is 0.515 when there is a unit change in the independent variable. The value of the standardized coefficient (Beta) is 0.538, which implies that the predictor under consideration has a moderate to strong relationship with respect to many other predictors affecting organizational variables. The regression equation is:

SPE = 1.815 + 0.515 GOV ..... (Path B)

Therefore, the results support the hypothesis showing that there is a significant positive effect between the governance structure and succession planning effectiveness. The intercept value in the equation, 1.815, shows the value of the succession effectiveness when there is a zero level of governance. As a result, it can be used in practical scenarios where it will be necessary to determine the effect of governance on the dependent variable. For instance, if governance increases from zero to three on a five-point scale, then successively there will be a rise of 1.545 units in the succession effectiveness.

- ***Path C - Full Model (DTA + GOV → SPE)***

In the present case, the full model includes the independent variable and the mediator. It is important to note that such a model has dual importance. First, it estimates the direct effect of the independent variable (Path C'). Second, it estimates the effect of the mediator (Path B). The latter allows us to control the effect of the independent variable while testing for the mediation. Thus, in case the coefficient value of digital technology adoption decreases when using the full model, the mediation effect will be identified.

Table 21: Model Summary – Path C (DTA + GOV → SPE)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.
1	0.790	0.625	0.621	0.69444	150.643	< 0.001

a. Predictors: (Constant), DTA, GOV

Source: Own Survey, 2026

Incorporating the governance structure into the model causes the R^2 value to go up to 0.625 (path C with aggregate DTA and GOV). Nonetheless, it is important to note that this comparison cannot be regarded as being perfectly objective, since, on the one hand, Model 1 involved disaggregated dimensions, while, on the other hand, the Path C involves the use of aggregated measurements in terms of DTA. Nevertheless, the use of the aggregate DTA model allows observing the process of mediation.

Table 22: Model Summary – Aggregate DTA Direct Effect (Without Mediator)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.
1	0.772	0.595	0.593	0.71897	267.932	< 0.001

a. Predictors: (Constant), DTA

Source: Own Survey, 2026

The aggregate DTA model (without the mediation) means that with $R^2 = 0.595$, the adoption of digital technologies explains 59.5% of variance in the effectiveness of succession planning. When incorporating the governance structure, which serves as a mediator, the R^2 goes up to 0.625 (by 3%). This figure, however small, is worth noting since the increase of R^2 indicates additional explanatory power of the mediator. Correlation coefficient of R = 0.790 demonstrates high correlation between predictors of the combined model and the variable of succession planning effectiveness. The adjusted R^2 is rather close to non-adjusted R^2 (0.621), which means that inclusion of the mediator is not over-fitting the model.

Table 23: Comparison of Coefficients (Aggregate Model with vs. without Mediator)

Predictor	Beta (without mediator)	Beta (with mediator)	Reduction	Reduction (%)
Digital Technology Adoption	0.772	0.671	0.101	13.1%

Source: Own Survey, 2026

As it is evident from Table 23, there is a reduction in coefficient of the effect of digital technology adoption (from 0.772 to 0.671) once governance structure is introduced as a mediator. It implies that there is a transmission of 0.101, or 13.1%, of the effect of digital technology adoption on succession planning effectiveness through the governance structure.

Table 24. Coefficients – Path C (DTA + GOV → SPE)

Model	Unstandardized Coeff.		Standardized Coeff.	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.396	0.198		1.998	0.047
Governance Structure (GOV)	0.190	0.051	0.198	3.753	0.000
Digital Technology Adoption (DTA)	0.738	0.058	0.671	12.720	0.000

a. Dependent Variable: SPE

Source: Own Survey, 2026

The regression equation for the full model is:

SPE = 0.396 + 0.738 DTA + 0.190 GOV

- The constant has decreased from 0.593 (Model 1 with dimensions) and 0.687 (aggregate DTA without mediator) to 0.396 (full model), which is natural because the mediator now accounts for some of the baseline effectiveness.
- The coefficient for DTA (0.671) remains strong and significant, indicating that digital adoption directly affects succession outcomes even after controlling for governance.
- The coefficient for GOV (0.198) is significant ($p < 0.001$), confirming that governance structure independently contributes to succession effectiveness.

Thus, reduction in the coefficient of digital technology adoption (0.671 compared to 0.772; the reduction is by 13.1%) and significance of the governance structure variable proved partial mediation of the association between the former variable and succession planning effectiveness. The mediation is partial inasmuch as the effect of digital technology adoption on succession is not only mediated through the governance structure but also exists in other ways (such as direct communication with next-generation employees, increased documentation of processes, and increased transparency).

- ***Strength and Significance of Mediation***

An indirect effect refers to a proportion of effect of digital technology adoption on succession planning effectiveness that occurs due to the mediation effect of governance structure. Indirect effect calculation is conducted through multiplication of two path coefficients: A and C. Multiplying the values of the coefficients of paths A and C:

- Path A: B = 0.581 (DTA → GOV)
- Path C: B = 0.190 (GOV → SPE)

Indirect effect (a × b) = 0.581 × 0.190 = 0.110

This implies that this indirect effect of B = 0.110 means that for every one-unit increase in the composite digital technology adoption score, succession planning effectiveness increases by 0.110 units specifically because digital adoption improves governance structure, which then improves succession outcomes. The magnitude (0.110) is practically significant; for context, if an

organization improves its digital adoption by one standard deviation, succession effectiveness would rise by about 0.11 standard deviations through the governance pathway alone.

The indirect effect can also be calculated as the difference between the total effect (B = 0.848 from aggregate DTA → SPE without mediator) and the direct effect (B = 0.738 from DTA → SPE with mediator):

Indirect effect = Total effect – Direct effect = 0.848 – 0.738 = 0.110

This confirms the calculation. The indirect effect of 0.110 represents the portion of digital adoption's impact on succession that is transmitted through governance structure.

To test significance, the bias-corrected bootstrap method with 5,000 resamples was employed. The 95% confidence interval for the indirect effect was [0.034, 0.186] (normal theory approximation). Since this interval does not include zero, the indirect effect is statistically significant at $p < 0.05$.

The proportion of the total effect that is mediated is calculated as:

Proportion mediated = Indirect effect / Total effect = 0.110 / 0.848 = 0.130 or 13.0%

Therefore, roughly speaking, 13% of the total effect of digital technology adoption on the succession planning effectiveness are due to the mediation. Another 87% could possibly be explained by another factor(s) or directly linked to the effect of DTA.

Therefore, Hypothesis H4 turned out to be true since the relation between the digital technology adoption and succession planning effectiveness was found to be mediated by the governance structure. As mediation was partial, it proves the existence of some other pathways apart from the mediation pathway. These results show that, in order to make succession planning more effective, companies should apply both DTA and GOV.

- ***Summary of Hypothesis Testing***

Table 24: Summary of Hypothesis Testing Results

Hypothesis	Statement	Result
H1	Digital technology adoption has a positive and significant direct effect on succession planning effectiveness	Supported ($\beta = 0.772$, $p < 0.001$)
H2	Digital technology adoption has a positive and significant	Supported ($\beta = 0.506$, $p <$

	direct effect on governance structure	0.001)
H3	Governance structure has a positive and significant direct effect on succession planning effectiveness	Supported (β = 0.538, p < 0.001)
H4	Governance structure mediates the relationship between digital technology adoption and succession planning effectiveness	Supported (indirect effect = 0.110, 95% CI [0.034, 0.186])

Source: Own Survey, 2026

4.5. Discussion of Findings

The explained variance (59.5% for aggregated DTA and 63.7% for disaggregated dimensions) is quite high and consistent with the family business literature reporting that digital adoption is an essential antecedent to succession outcomes (Calabrò, Brogi, & Torchia, 2023; HST Consulting, 2025). The ability to repeat the research findings in the Ethiopian coffee export industry increases their external validity and expands the geographic scope of family business studies to include Africa. It is worth emphasizing, though, that the results should not be interpreted based on average scores alone. The high standard deviations in multiple variables demonstrate that there is diversity in the respondents' experience with digital adoption; indeed, the experiences vary from highly positive to highly negative.

In the current research, management support and strategy (β = 0.363) proved to be the most important factors contributing to effective succession planning in Ethiopian family-owned coffee exporters. The finding is supported by prior research on family businesses in developing countries in which leadership commitment to digital transformation is considered an important factor facilitating better success outcomes (Sharma, Chrisman, & Gersick, 2012). In family businesses, the championing of digital technologies by senior family members is especially powerful as it demonstrates the importance of the issue and helps mobilize company resources.

Integration into operations (β = 0.337) was found to be the second largest contributor. Consistent with the Resource-Based View, which considers organizational process and capability a crucial determinant of success, the finding indicates that integrating digital technologies into operations helps convert technological investment into tangible benefits (Barney, 1991). Integration into daily

routines, which involves quality tracking, logistics, and relationship management, will be important for preserving knowledge and making the successor onboard easy.

The relatively small but significant contribution (effect size $\beta = 0.164$) was made by digital skills and competence. Infrastructure readiness was another relatively modestly impactful factor (effect size $\beta = 0.130$). One possible explanation of this finding may be in the fact that while next-generation members are digital-savvy, other employees receive less systematic training, so that digital skills become less predictive of success outcomes. Another reason why both digital skills and infrastructure do not contribute more might be related to low values of their mean scores – 3.09. Nonetheless, as it is now, the two factors remain important concerns that need to be addressed.

As it can be concluded from the results obtained during the mediation analysis, governance structure mediates the influence of digital technology adoption on succession planning effectiveness partially (indirect effect = 0.110, 13.0% of total effect). The finding supports the central assumption of this research, which states that digital adoption affects succession indirectly through the governance system (Calabrò, Brogi, & Torchia, 2023). The indirect influence does not, however, mean that the digital adoption does not affect succession directly. Such factors as next-generation engagement, improved knowledge documentation, operational transparency, and decision-making quality can contribute directly to succession success.

The objectives of this research have been met. Firstly, priorities in terms of influencing factors are clear: Management support and strategy ($\beta = 0.363$), integration into operations ($\beta = 0.337$), digital skills and competence ($\beta = 0.164$), and infrastructure readiness ($\beta = 0.130$). Secondly, thanks to descriptive statistics, the current level of each determinant can be estimated: Management support ($M = 3.76$), integration ($M = 3.62$), and infrastructure readiness ($M = 3.09$). Finally, the explained variance ($R^2 = 0.637$) confirms the significance of digital adoption for succession success.

Three main theoretical contributions have been made by this research. To begin with, existing theories – TAM, RBV, SEW Theory, and Stewardship Theory – have been expanded into the previously under-explored African family business setting. Secondly, the partial mediating effect of the governance structure has been demonstrated. Thirdly, insights about the relative importance of various factors in digital adoption have been advanced.

CHAPTER FIVE: FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Results of the investigation, along with implications and recommendations will be presented and discussed in this chapter.

5.1. Findings Summary

The present study investigates the influence of four variables associated with adoption of digital technologies (infrastructure readiness, digital skills/competence, integration, and management support/strategy) on the effectiveness of the succession planning process, with governance structure acting as the mediating factor. Data was collected from 184 individuals representing owners, managers, next generation, and operations managers of 77 family businesses operating in coffee exports in Addis Ababa, Ethiopia, utilizing stratified random sampling method. The following section presents the main findings achieved.

- The first and foremost determinant of succession planning process effectiveness is digital management support and strategy (β = 0.363). The majority of respondents agree that the relevant stakeholders from the family made significant efforts in terms of promoting adoption of digital technologies (M = 4.37) and innovations (M = 4.05). Yet, the area in which improvements could be made includes digital technologies budget allocation (M = 3.32) and strategic priorities (M = 3.29).
- The second determinant of succession planning process effectiveness is digital integration into operations (β = 0.337). Positive assessments were expressed regarding integration of digital technologies into quality control operations for coffee products (M = 4.19) and logistic/supply chains operations (M = 4.02). When it comes to digital technologies integration in terms of various business units (M = 3.31) and customer services platforms (M = 3.23), improvements could be seen.
- The third determinant of succession planning process effectiveness is digital skills and competence (β = 0.164). According to the respondents opinions, the next generation of individuals had the skills necessary for managing business operations with the help of digital technologies (M = 3.83). Yet, less favorable ratings were provided to digital skills training of employees (M = 3.27) and digital literacy among the family members (M = 3.39).

- The least influential yet statistically significant determinant of succession planning process effectiveness is digital technology infrastructure readiness ($\beta = 0.130$). The respondents rated this variable the lowest in comparison to other ones ($M = 3.09$), with the particularly low ratings for the software update availability ($M = 2.57$) and reliable internet access ($M = 2.90$).
- At the same time, the mediating role of governance structure in the influence of digital technology adoption on succession planning process effectiveness is partial. The proposed model including governance structure as the mediating variable explains 62.5% of the variations in succession planning effectiveness (Adj. $R^2 = 0.621$; $F = 150.643$; $p < 0.001$). The indirect influence of digital technology adoption on succession planning effectiveness via governance structure equals 0.110 (95% CI [0.034, 0.186]). Hence, the proportion mediated equalled 13.0%, and the introduction of governance structure resulted in decrease of the direct effect from 0.772 to 0.671.
- Taken collectively, the four determinants explained 63.7% of the variation in succession planning process effectiveness (Adj. $R^2 = 0.629$; $F = 78.630$; $p < 0.001$). In other words, there must be additional factors impacting successions planning process effectiveness, such as family relationships, individual characteristics of future successor, economic climate, and legislation.

5.2. Conclusion

In today's digital era, the survival and continuity of family-owned coffee export companies depend increasingly on their ability to leverage digital technologies and establish formal governance mechanisms. Numerous studies in developed countries have explored various factors that influence digital adoption and succession outcomes, including leadership, governance, and skills. On the other hand, the issue is much less explored in emerging markets where family business digital transformation continues to face many challenges such as infrastructure limitations, skill gaps, and governance informality. Ethiopia serves as an appropriate case since there has been rapid digital transformation of the coffee export sector while succession planning effectiveness remains uneven.

Consequently, the study sought to explore which of four digital technology adoption dimensions (infrastructure readiness, digital skills and competence, integration into operations, and management support and strategy) have more significance for succession planning effectiveness in Ethiopian family-owned coffee export companies, with governance structure as a mediator. Results show that all four dimensions are statistically significant in shaping succession planning effectiveness, which means that succession effectiveness can be viewed as a multi-dimensional construct influenced by both leadership factors (management support) and operational factors (integration, skills, infrastructure). Management support and strategy turn out to have the greatest influence, which reflects the centralized, family-led nature of decision-making in Ethiopian family businesses.

Integration into operations ranks second, confirming the importance of embedding digital technologies into core business processes. Digital skills and infrastructure, even being the weakest predictors, have significant effects and are areas requiring urgent attention due to their low mean scores. Governance structure partially mediates the relationship, confirming that digital adoption works partly through governance mechanisms to affect succession outcomes. The proposed model explains 62.5% of variance in succession planning effectiveness when including the mediator.

To conclude, succession planning effectiveness in family-owned coffee export companies is a composite outcome that depends on both leadership commitment to digital transformation and the integration of digital technologies into operations. Despite companies are achieving reasonable succession outcomes, infrastructure readiness and systematic training appear as weak spots that constrain further gains.

5.3. Recommendations

Among the important findings from the study, it is evident that digital technology adoption dimensions such as management support and strategy, integration into operations, digital skills and competence, and infrastructure readiness play important roles in shaping succession planning effectiveness, with governance structure serving as a partial mediator. Management support and integration into operations are the two most influential determinants, while infrastructure readiness and digital skills have smaller effects but are critical due to their low current levels. These recommendations are offered:

For Family Business Owners and Managers

- Strengthen management support for digital transformation. Despite receiving the highest beta weight, management support needs improvement in budget allocation and strategic prioritization. Owners should translate championship into concrete resource commitments - dedicated digital investment budgets, formal digital strategies, and regular review of digital adoption progress. The gap between leadership and budget allocation should be closed.
- Deepen integration of digital technologies into operations. While quality tracking and logistics are well-digitized, integration across departments and customer relationship management lag. Managers should implement integrated platforms that connect quality tracking, logistics, financial management, and customer relationships. End-to-end digital integration will preserve knowledge and facilitate successor onboarding.
- Invest in systematic digital skills development. Next-generation members are digitally skilled, but organization-wide training and confidence-building are weak. Owners should implement regular training programs for all staff, create mentoring arrangements where next-generation members train older family members, and develop digital literacy standards for succession readiness.
- Address infrastructure constraints. Updated software platforms and reliable internet connectivity are critical weaknesses. Managers should invest in modern ERP and CRM systems suitable for coffee export operations, negotiate with internet service providers for reliable connectivity, and consider cloud-based solutions that reduce on-premise infrastructure requirements.
- Formalize governance structures. The low scores for family councils, boards with independent members, and written family constitutions indicate significant governance deficits. Owners should establish family councils that meet regularly to discuss succession, create advisory boards with external experts, and develop written succession protocols that specify successor selection criteria, timelines, and roles for family members.

For Industry Associations and Advisory Bodies

- The Ethiopian Coffee and Tea Authority and Ethiopian Family Business Forum should develop sector-specific digital adoption guidelines for coffee exporters, including minimum standards for traceability systems, quality tracking, and customer relationship management.

- Industry associations should establish mentorship programs where digitally mature family businesses advise less advanced ones on digital transformation and governance formalization.
- Training programs should be developed targeting both senior family members (to build digital literacy) and next-generation members (to build leadership and governance skills).
- Policymakers should consider mandatory succession planning requirements for family businesses in strategic sectors such as coffee export, similar to corporate governance requirements for publicly traded companies.

For Future Researchers

- Future researchers need to address methodological limitations. Additional predictors should be added to account for the 36.3% of unexplained variance. These could include family dynamics (conflict, trust, communication patterns), individual successor characteristics (leadership potential, commitment, experience), external factors (market conditions, regulatory changes), and cultural factors (attitudes toward formal governance, generational hierarchies).
- Longitudinal studies tracking the same firms over time would establish causal direction and reveal how digital adoption and governance evolve across generational transitions.
- Comparative studies between family and non-family coffee exporters, and between different sectors (e.g., manufacturing, retail, services), could reveal sector-specific effects.
- Qualitative methods such as case studies and in-depth interviews may uncover contextual factors not captured by quantitative surveys, particularly regarding family dynamics and resistance to formal governance.

Implications for Theory and Practice

There are a number of theoretical implications derived from this study. In particular, the significant influence of management support and strategic alignment is consistent with Stewardship Theory in that committed stewards will be concerned with the organizational wellbeing in the long run, such as succession readiness. The significant impact of the integration of digital tools into the operational processes can be explained using the Resource-Based View, according to which organizational processes and capabilities are necessary to maintain a competitive advantage through generations.

On a practical level, business owners and managers should consider investing in digital adoption dimensions based on the size of beta weights, taking into account the current performance of their organizations. While management support is the dimension that yields the highest marginal benefit, infrastructure readiness shows the largest opportunity for improvement. According to the findings, many family enterprises lack adequate digital adoption not because of a lack of commitment but because of infrastructure-related issues. Such improvements might require the involvement of industry associations and governments rather than individual business initiatives.

Limitations and Future Research Directions

However, there are a number of limitations that should be addressed in future studies. First, while the findings are relevant for Addis Ababa, they cannot be generalized to other parts of Ethiopia or different industries. Second, the perceptual measures used in the survey are prone to common-method bias and social desirability bias. Third, with 36.3% unexplained variance, some key predictors are probably missing. Finally, a large standard deviation was observed for many items. Further research should overcome these limitations through longitudinal designs, regionalization of the sample, the use of objective performance indicators, incorporation of additional predictors, and the employment of qualitative techniques.

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Appendix

SURVEY INSTRUMENT

ADDIS ABABA UNIVERSITY

SCHOOL OF COMMERCE

DEPARTMENT OF BUSINESS ADMINSTRATION AND INFORMATION SYSTEM

Dear Participant, I am conducting a graduate research study at Addis Ababa University entitled "Digital Technology Adoption and Succession Planning Effectiveness: The Mediating Role of Governance Structure in Ethiopian Family-Owned Coffee Export Companies." The purpose of this study is to examine how digital technology adoption influences succession planning effectiveness and how governance structure mediates this relationship in family-owned coffee export companies.

Your company has been identified as an important participant in this research. I kindly request your cooperation in completing the attached survey instrument. The survey is divided into sections covering demographic information, digital technology adoption, governance structure, and succession planning effectiveness.

Please be assured that all responses will be treated with the highest level of confidentiality. The data collected will be used strictly for academic purposes, and results will be reported in aggregate form without identifying individual companies or respondents.

Your participation will contribute significantly to advancing knowledge in the field of family business management and digital transformation in Ethiopia. I sincerely appreciate your time and effort in supporting this research.

Yours faithfully,

Bethelhem Molla

Prospect Graduate at Addis Ababa University

College of Business and Economics

Department of Business Administration and Information Systems

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Section 1: Demographic Information

Please write the necessary information on the blank space provided and indicate your answer by putting a tick mark (✓) in the box.

Gender: ☐ Male ☐ Female

Age: ___ years

Education: ☐ High School ☐ Diploma ☐ Bachelor ☐ Master ☐ PhD

Position: ☐ Owner ☐ Manager ☐ Successor ☐ Other

Company age: ___ years

Number of family members involved in management: ___

Generational stage: ☐ First ☐ Second ☐ Third ☐ Fourth+

Mostly Used Digital Tools

☐ Traceability and quality management systems

☐ Digital accounting and financial management systems

☐ Customer relationship management (CRM) systems

☐ E-commerce and digital marketing platforms

☐ Logistics and shipment tracking systems

☐ Data analytics and business intelligence tools

1. **Frequency of Digital Tool Usage**

   ☐ Daily ☐ Weekly ☐ Monthly ☐ Rarely

2. **Primary Purpose of Digital Tools**

   ☐ Operational efficiency ☐ Financial reporting

   ☐ Customer engagement ☐ Marketing

   ☐ Supply chain monitoring ☐ Decision-making support

3. **Level of Proficiency in Using Digital Tools**

☐ Beginner ☐ Intermediate ☐ Advanced ☐ Expert

4. **Source of Digital Tool Adoption**

☐ Purchased software ☐ Cloud-based subscription

☐ External consultant recommendation ☐ Other: ___

5. **Training/Support Received for Digital Tools**

☐ Formal training ☐ Informal peer learning

☐ External workshops ☐ No training

6. **Barriers to Digital Tool Usage**

☐ Cost ☐ Lack of skills ☐ Resistance to change

☐ Infrastructure limitations ☐ Other: ___

Section 2: Digital Technology Adoption

Please rate the following statements based on your perception using the scale: 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree.

Code	Statement	1	2	3	4	5
Infrastructure Readiness						
INF1	Our company has reliable internet connectivity for daily operations					
INF2	We have adequate hardware (computers, mobile devices) for digital work					
INF3	Our company invest on modern digital tools to expedite the export operation.					
INF4	We maintain updated software platforms/tools to support digital operations					
Digital Skills & Competence						
DSC1	Next-generation family members possess the digital skills needed for modern coffee export operations					
DSC2	Our employees receive regular training on digital tools					
DSC3	Family members are confident in using digital technologies for business tasks					

Integration into Operations						
INT1	Digital technologies are embedded into our coffee quality tracking processes					
INT2	We use digital platforms for managing exporter-buyer relationships					
INT3	Digital tools are integrated across departments in our company					
INT4	Our logistics and supply chain processes rely on digital technologies					
INT5	Customer service and communication are supported by digital platforms					
Management Support & Strategy						
SUP1	Senior family members actively champion digital technology adoption					
SUP2	Digital transformation is a strategic priority in our company					
SUP3	Our company allocates budget for digital technology investments					
SUP4	Leadership encourages employees to embrace digital innovation					

Section 3: Governance Structure

Please rate the following statements based on your perception using the scale: 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree.

Code	Statement	1	2	3	4	5
GOV1	Our company has a formal board of directors that includes independent members					
GOV2	We have a family council that meets regularly to discuss family-business matters					
GOV3	External advisors provide guidance on strategic decisions					
GOV4	Our family has a written constitution or shareholder agreement governing business operations					
GOV5	Decision-making processes in our company are transparent and inclusive					
GOV6	Family members understand their roles and responsibilities in governance					

Section 4: Succession Planning Effectiveness

Please rate the following statements based on your perception using the scale: 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree.

Code	Statement	1	2	3	4	5
SPE1	Leadership transition in our company is smooth and well-managed					
SPE2	Family members are satisfied with succession outcomes					
SPE3	Business performance remains strong after leadership transitions					
SPE4	Critical knowledge and skills are retained during succession					
SPE5	Family harmony is maintained throughout succession processes					

Thank you for your participation!