“Evolving financial practices in family enterprises: The impact of generational dynamics on digital transformation in Jordan”

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EVOLVING FINANCIAL PRACTICES IN FAMILY ENTERPRISES: THE IMPACT OF GENERATIONAL DYNAMICS ON DIGITAL TRANSFORMATION IN JORDAN

Abstract

The adoption of digital financial tools improves financial efficiency, transparency, and governance. However, family-owned businesses in Jordan adopt these tools at a lower rate than non-family businesses, potentially limiting their competitiveness. This study examines the extent of digital adoption, its impact on financial management, and the role of generational involvement.

A survey of 366 businesses (262 family-owned and 104 non-family) across six industries was analyzed using multi-group analysis. Family-owned businesses reported a 31.2% improvement in financial management after adoption, compared to 19.6% in non-family businesses ($p = 0.039$). Generational involvement increased adoption by 26.5% in family-owned businesses versus 10.8% in non-family businesses ($p = 0.015$). Cultural resistance hindered adoption in family-owned businesses by 4.5% more than in non-family businesses ($p = 0.028$). Business size influenced adoption similarly (10.2% vs. 10.1%, $p = 0.460$). Financial management improvements were slightly lower in family-owned businesses (76.6%) than in non-family businesses (78.2%, $p = 0.532$). Adoption rates in family-owned businesses were 11.7% lower ($p = 0.039$). The interaction of business type and generational involvement contributed to a 22.0% increase in adoption ($p < 0.01$).

These results underscore the importance of phased adoption, digital literacy programs, and intergenerational collaboration in accelerating financial digitalization within family-owned businesses. Addressing cultural resistance is essential for ensuring long-term financial sustainability and competitiveness in Jordan's evolving economy.

Keywords digitalization, financial management, generational involvement, cultural resistance, financial technology, business sustainability, innovation, competitiveness

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INTRODUCTION

Family-owned businesses (FOBs) make significant contributions to most economies, including Jordan's, in terms of GDP, employment, and financial solidity. Traditionally, such companies pass down through the family and, therefore, value control and solidity, and such factors have a significant bearing on financial management approaches utilized in such companies. In an era of high-tech development, most of these companies resist transitioning over to financial technology, a significant challenge for most such companies. Despite financial technology (fintech) offering efficiency, transparency, and governance, most such companies resist transitioning over to new financial processes. That can make them less competitive, particularly in an information-intensive worldwide economy.

The most important issue discussed in this study is why Jordanian

FOBs fall behind in financial digital tool adoption when compared to non-family firms, despite financial digitalization's seeming advantages. This issue is deeper than individual preference and is conditioned by larger, broader economic, cultural, and age-related factors driving decision-making in FOBs. Unlike non-family companies, whose efficiency and expert management compel them, FOBs must navigate complex intergenerational succession, deep-rooted customs, and a strong desire to maintain control. All these factors complicate key questions about how and in what form FOBs can implement financial digital tools and tools in a way that will not threaten their founding values and philosophies.

To become competitive, Jordanian FOBs must use new financial tools as traditional instruments will leave them behind in the emerging digital economy. Overcoming technology barriers to use is not only important for individual companies but for the economy in general. How family companies can utilize new financial tools and maintain values is addressed in this study.

1. LITERATURE REVIEW

Family-owned businesses (FOBs) contribute to Jordan's economy in terms of GDP, employment, and financial solidity. Handed down through a number of generations, such companies thrive in an environment with a bias towards solidity, long-term management, and financial independence (Koura et al., 2025; Morshed, Maali, et al., 2024). Traditional financial management, in its function of providing continuity, can, at times, discourage new financial tools, and thus competitiveness in a technology-intensive international economy (Morshed, 2024b). Despite enhanced efficiency, transparency, and governance, modern financial tools have experienced slow integration in Jordanian FOBs, with cultural values, intergenerational relations, and resistance to change holding them at bay (Abaddi, 2024; Alqudah et al., 2024). In this review, financial technology use in Jordanian FOBs is contrasted with non-family companies, with factors driving and constraining transformation, and transformational strategies for combining modern tools with family values, with a view towards maintaining family-owned character in such companies.

The financial strategies of Jordanian FOBs have a long-standing preference for security and averse behavior toward taking a chance. Most of them rely on in-house financing and shun investments, with a view to maintaining family control in its current form. According to Jansen et al. (2023) and Kárpáti and Szüle (2025), these strategies protect a company from external intervention but at a price of creating inefficiencies through access restrictions to financial sources that could drive expansion. Besides, not delegating financial management to experts, non-family executives leave financial operations in a state of outmoded practice, possibly not in harmony with present-day economic needs. According to Basly and Hammouda (2020) and Yıldırım and Erdil (2024), in Jordan, and emerging economies in general, companies that do not use digital solutions run a chance of becoming less competitive, with increasingly computerized financial processes and computer-dependent decision-making in general worldwide.

Digital financial tools, including AI analysis, cloud accounting software, and computerized financial reporting tools, offer Jordanian FOBs an opportunity for financial modernization. As argued by Ferraro and Cristiano (2021) and Wu et al. (2025), these tools allow real-time tracking of financials, with reduced errors and increased accuracy in decision-making. In a similar observation, Zapata-Cantu et al. (2023) note that such tools can counter a common issue in FOBs: lack of differentiation between private and commercial financial affairs. Governance, compliance with regulators, and financial transparency can be boosted through organized financial management tools (Morshed, 2024a; Ramadan & Morshed, 2024a). On the contrary, in contrast to such an improvement, Upadhyay et al. (2023) report that Jordanian FOBs, in a similar manner to such entities in traditionalistic cultures, resist technology integration through deep-rooted financial habits, security concerns, and a perception that technology-facilitated management erodes traditional values in a business, as supported by Alghazzawi (2025) and Magableh et al. (2024).

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Generational factors play a significant role in shaping Jordanian FOBs' technology use. Younger family members, with a deeper technological expertise, drive technological transformation, appreciating its value in terms of efficiency and financial controls. Canovi et al. (2023) conclude that intergenerational conflicts arise consistently, with older family members, with traditional powers of decision, rejecting transformation for traditional methodologies. Morshed, Ramadan, et al. (2024) confirm this fact, citing older-domineered companies' slowdown in terms of technology deployment, in anticipation of disruptions in traditional processes. Ahmad et al. (2024), in contrast, argue that non-family companies, with organized management and financial operations, have a smoother transition towards financial technology tools. Their concern for efficiency and processes in a normalized form enables easier shifts towards new financial management, in contrast with FOBs, whose personalized and emotional factors complicate decision processes, this opinion is proven by Garnitz et al. (2025).

The structural differentiation between family-owned and non-family-owned businesses (FOBs) continues to shape their financial path toward digitalization. Suddaby and Jaskiewicz (2020) theorize that non-family companies prioritize efficiency and competitiveness over heritage maintenance and, for that reason, have a high willingness to follow financial technology. Atienza-Barba et al. (2025) add that even in Jordan, family-owned companies, even when taking a slow pace in following digital tools when adopted, tend to have deep financial governance and financial discipline shifts. Bouncken and Schmitt (2022) add that financialization can serve as a driving force for overall transformation in an entity, strengthening succession planning, financial reporting, and processes in strategic decision-making. Corvello et al. (2022) observe, in a similar observation, that when financial technology is adopted in successful family-owned companies, transparency, accountability, and financial viability in such companies witness a significant improvement. All these, however, can only become a reality when companies actively face inner resistance and implement digital tools in a manner that reflects long-term aspirations (Magnusson et al., 2022).

Effective Jordanian FOBs' digital adoption necessitates specific strategies for overcoming resistance, closing intergenerational gaps, and creating digital competency. Forcellati et al. (2021) posit that training and educational programs can enable family members to gain the skills for effective use of financial tools in a digital environment.

A phased rollout of technology will enable companies to learn and adapt over a timeframe, in contrast to an immediate break from traditional practice (Zhelev & Kostova, 2024). Patria et al. (2023) and Begnini et al. (2023) state that choosing financial technology specifically for individual requirements of FOBs will cause less disruption and maximize efficiency. Neumeyer et al. (2020) and Cetindamar et al. (2021) state that family participatory decision-making, in contrast to top-down requirements, will yield acceptance and ease the financial modernization transition. Family dynamics play an important part in successful technology adoption. According to Heredia et al. (2022), variance in technological capabilities between family members can lead to variable use, and, in consequence, the overall effectiveness of new financial tools will suffer. Laique et al. (2023) believe that family-owned companies with standalone boards of directors have a high opportunity for effective financial technology integration, with expert boards downscaling emotion in decision processes. Lannon et al. (2024) add that in companies whose family owners perceive technology as a tool for strengthening long-term solidity and not a cause of disruption, technology adoptions become successful. According to Coco et al. (2024), family and business objective harmonization is responsible for financial modernization acceptance and not rejection.

In the future, new financial technology, including artificial intelligence, blockchain, and fintech breakthroughs, will offer new channels for financial management in Jordanian FOBs. As argued by Kou and Lu (2025) and Bhawna and Gupta (2025), analysis through AI can enhance financial planning, and the application of blockchain technology can enhance security and transparency in transactions. As argued by Evans and Britt (2023), such FOBs, when active-

ly embracing these breakthroughs, will have a chance to maintain competitiveness and values at heart. Falah Alroud et al. (2025) believe that adaptability and continued investment in capabilities will be important in an endeavor to make Jordanian FOBs relevant in a technology-intensive environment in the future.

Although numerous studies have been performed on financial technology use, many gaps have not yet been addressed about how such dynamics work in Jordan. Most studies have focused on Western economies, and little is known about family structures, values, and environments in regions and how these affect Jordanian FOBs' digital transformation. There have not been enough studies performed to assess the real impact of financial tools in governance, efficiency, and financial transparency in such companies.

The objective of this study is to investigate the use of financial tools in Jordanian family-owned businesses and compare it with financial management in non-family businesses. It aims to discover driving factors for digital use, its impact on financial governance and transparency, and whether and in what manner family presence at a generational level can serve as a moderator for such an impact.

The following hypotheses were developed:

H1: Jordanian family-owned firms have a smaller opportunity for leveraging financial technology in comparison with non-family firms.

H2: Financial tool use in a family-owned business will have a significant positive impact on family-owned companies compared to non-family companies regarding financial practice in family-owned companies.

H3: Generational presence will have a moderation role between financial tool use and financial practice improvement in family-owned firms.

H4: There is a significant variation between family and non-family companies in Jordan in terms of ease in leveraging financial tools in a digital format

2. METHODOLOGY

This study employs a cross-sectional survey design to examine the adoption and impact of digital financial tools in family-owned and non-family businesses in Jordan. By collecting data at a single point in time, this approach provides a comprehensive snapshot of current practices, attitudes, and perceptions regarding digital financial tools. The study aims to identify variations in adoption rates, key influencing factors, and the extent to which digital financial tools enhance financial management.

To ensure a representative sample, a purposive stratified sampling method is used, allowing for the inclusion of businesses with diverse characteristics. The sample is stratified based on business type (family-owned vs. non-family), company size, industry sector, and generational involvement, ensuring a broad spectrum of financial management practices is captured (Ramadan & Morshed, 2024b). Businesses operating in Jordan's major economic hubs, including Amman, Irbid, Zarqa, and Aqaba, are included to enhance regional representation. The study targets respondents holding key financial management roles, such as family members in executive positions and non-family financial managers (e.g., CFOs and accountants), to capture multiple perspectives on digital financial tool adoption. Additionally, first-generation businesses and multi-generational enterprises are included to assess the role of generational involvement in the adoption process. The study spans multiple industry sectors, including retail, manufacturing, real estate and construction, finance and banking, healthcare, and tourism, ensuring findings reflect Jordan's diverse economic environment.

A total of 481 respondents are targeted, providing sufficient statistical power for structural equation modeling (SEM) and comparative analyses using SmartPLS. Participants are recruited through professional networks, business associations (e.g., the Jordan Chamber of Commerce, the Young Entrepreneurs Association), and family business forums. These recruitment strategies facilitate access to a diverse and representative sample of Jordanian businesses.

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The survey instrument is tailored to the Jordanian business environment and is available in both Arabic and English. It comprises multiple sections covering demographic information, company background, and key study variables. Questions assess digital financial tool adoption, perceived financial management improvements, attitudes toward digital transformation, and the role of generational involvement in the adoption process. The survey examines various digital tools, including accounting software, online banking, and mobile payment systems. Likert-scale responses (ranging from 1 to 5) are used to measure subjective assessments, while categorical and continuous variables capture demographic and usage-related data. The survey is administered online via platforms such as Google Forms, SurveyMonkey, and Qualtrics, ensuring accessibility via mobile and desktop devices (Putri Susanto et al., 2024). A pilot test was conducted in August 2024 with a small group of respondents to refine question clarity and improve the survey's effectiveness before full-scale distribution. The data collection phase extended from September to December 2024, providing adequate time to reach the target sample.

The sample distribution, with Amman comprising 52% of respondents, will likely skew results toward higher digital adoption rates, as businesses in Amman have greater access to fintech infrastructure, regulatory support, and exposure to digital tools. This may lead to an overestimation of digital financial adoption trends, as businesses in Irbid, Zarqa, and Aqaba – where traditional financial practices remain prevalent – are underrepresented. The strong presence of family-owned businesses (FOBs) in Amman may also amplify the perceived generational divide, as younger, tech-savvy family members in urban areas push for digital transformation, while rural FOBs, still controlled by older generations, may resist change. Additionally, industry-specific adoption trends may be skewed, as sectors like retail and finance, which are highly represented, are typically early adopters of digital tools, while industries like manufacturing, healthcare, and construction may face greater adoption barriers due to traditional financial management structures (Shaikh & Amin, 2025). If not carefully analyzed, these biases could lead to overgeneralized conclusions, underestimating regional disparities, and the unique challenges of FOBs outside Amman in adopting financial technologies.

The study investigates multiple variables to understand the factors influencing digital tool adoption and financial management improvements. The primary independent variables include business type (binary: 1 = Family-owned, 0 = Non-family-owned), digital financial tool adoption (composite index based on the number of tools implemented: 1 = adopted, 0 = not adopted), and generational involvement (assessed on a five-point Likert scale

Table 1. Sample distribution

Stratum	Category	Target Sample Size	Responses (76%)
Region (Jordan)	Amman	250	190
	Irbid	80	61
	Zarqa	70	53
	Aqaba	50	38
	Other Regions	31	24
Role within the Firm	Family Members in Management	320	243
	Key Non-Family Employees	161	122
Generational Involvement	First-Generation Businesses	250	190
	Multi-Generational Businesses	231	176
Type of Business	Family-Owned Businesses	345	262
	Non-Family Businesses	136	104
Industry Sectors	Retail	80	61
	Manufacturing	75	57
	Real Estate & Construction	80	61
	Finance	50	38
	Healthcare	65	49
	Tourism	65	49
	Other	66	50
Total	All Categories	481	366

to determine the level of influence exerted by different generations in financial decision-making) .

The dependent variables focus on financial management practices, evaluating financial efficiency, transparency, and governance. Additionally, improvements in financial management are assessed by comparing pre- and post-adoption financial processes using self-reported Likert-scale responses. The study also examines generational involvement as a potential moderating factor in the relationship between digital financial tool adoption and financial management outcomes.

To mitigate external factors, a range of control factors is included. Measuring cultural values assesses the impact of Jordanian business conventions in terms of digital acceptance. Business size is taken into consideration with regard to employee numbers or annual sales to manage variation in terms of firm size. Industry types are grouped into predefined categories to manage variation in terms of trends in digital acceptance between industries (Shiyyab & Morshed, 2024).

The analysis utilizes Partial Least Squares Structural Equation Modeling (PLS-SEM) based on SmartPLS, chosen for its suitability in dealing with intricate models, evaluating latent constructs, comparing interrelationships between different firm categories, as well as its ability to predict interdependencies. The analysis commences with the definition of measurement as well as structural models for verifying critical construction, i.e., financial management practices, cultural values, types of businesses, involvement by generations, and adoption of technology tools—on a very accurate level. For examining reliability, as well as validity, the research examines composite reliability, Cronbach's alpha, as well as Average Variance Extracted (AVE) (Hair Jr et al., 2014).

The hypothesized relations between factors were then analyzed using path coefficients, p-values, and R-square values in a study. In a Multi-Group Analysis (MGA), in a study via PLS-SEM, family and non-family companies' structures are contrasted in an analysis to unveil significant variation in terms of financial tool technology's role in both companies. Generational presence and cultural values' moderating impact were analyzed to comprehend via them in what way financial practice management differs in different settings of companies (Ngah et al., 2023).

The use of PLS-SEM in this study is most appropriate, with its suitability in dealing with non-normal distribution of data and relatively small samples and its accommodation for in-depth comparisons between groups of companies. With its use of Multi-Group Analysis, a rich picture of financial tools' contribution towards financial management in family and non-family companies in Jordan is guaranteed through its output.

To extend the analysis of the use of digital tools' contribution, a model of regression is taken over. Financial practice management is represented in terms of the use of digital tools, form of business, age group, and cultural values, and terms for interaction between them. The form of business and form of industry serve as controls. The model can be represented as follows:

$$\begin{aligned} &Financial\ Management\ Practices = \beta 0 \\ &+\beta 1\begin{pmatrix} Adoption \\ of\ Digital\ Financial\ Tools \end{pmatrix} \\ &+\beta 2\left(Type\ of\ Business\right) \\ &+\beta 3\left(Generational\ Involvement\right) \\ &+\beta 4\left(Cultural\ Values\right) \\ &+\beta 5\begin{pmatrix} Adoption\ of\ Digital\ Financial\ Tools \\ \times Generational\ Involvement \end{pmatrix} \\ &+\beta 6\left(Type\ of\ Business \cdot Cultural\ Values\right) \\ &+\beta 7\left(Size\ of\ Business\right) \\ &+\beta 8\left(Industry\ Type\right)+\varepsilon. \end{aligned} \quad (1)$$

Each coefficient represents a distinct influence on financial management practices:

- β1 measures the direct effect of digital financial tool adoption on financial management efficiency and governance.
- β2 captures differences between family-owned and non-family businesses in financial management outcomes.

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- β3 represents the impact of generational involvement on financial decision-making.
- β4 controls for the influence of Jordanian cultural values on digital transformation.
- β5 examines whether generational involvement moderates the relationship between digital tool adoption and financial management.
- β6 assesses the moderating effect of cultural values on business type and digital adoption.
- β7 controls for the effect of business size on digital tool adoption and financial practices.
- β8 adjusts for industry-specific differences in financial management practices.

By including interaction terms, such a model can generate a deeper level of analysis regarding how important factors such as age cohort and cultural values work to modulate financial tool use and financial performance impact. By employing such an analysis, a sensitive analysis of financial tool use and its impact on financial management in Jordanian companies can be conducted, providing insights for future financial technology use in Jordanian companies.

3. RESULTS AND DISCUSSION

The report identifies significant roles played in financial integration in family-owned businesses (FOBs) through cultural integration and intergenerational engagement. Despite fintech reluctance,

Table 2. Descriptive analysis of variables

Variable	Mean	Median	S.D.	Minimum	Maximum
Independent Variables					
Type of Business (1 = Family-owned, 0 = Non-family)	0.72	1.00	0.45	0.00	1.00
Adoption of Digital Financial Tools (Score 0-1)	0.68	0.70	0.40	0.10	1.00
Generational Involvement (Likert Scale 1-5)	3.85	4.00	0.72	2.00	5.00
Dependent Variables					
Financial Management Practices (Likert Scale 1-5)	4.30	4.25	0.60	3.00	5.00
Improvement in Financial Management Practices (Likert Scale 1-5)	4.40	4.50	0.55	3.25	5.00
Moderating Variables					
Generational Involvement (Likert Scale 1-5)	3.85	4.00	0.72	2.00	5.00
Control Variables					
Cultural Values (Likert Scale 1-5)	4.25	4.20	0.50	3.50	5.00
Size of Business (Number of Employees)	265.00	250.00	90.00	100	500
Industry Type (Categorical)	–	–	–	–	–

Table 3. Correlation matrix

Variable	Type of Business	Adoption of Digital Financial Tools	Generational Involvement	Financial Management Practices	Improvement in Financial Management Practices	Cultural Values	Size of Business
Type of Business	1.000	–0.50	–0.35	–0.42	–0.38	0.28	–0.22
Adoption of Digital Financial Tools	–0.50	1.000	0.58	0.72	0.76	0.52	0.42
Generational Involvement	–0.35	0.58	1.000	0.60	0.54	0.32	0.28
Financial Management Practices	–0.42	0.72	0.60	1.000	0.82	0.48	0.38
Improvement in Financial Management Practices	–0.38	0.76	0.54	0.82	1.000	0.58	0.46
Cultural Values	0.28	0.52	0.32	0.48	0.58	1.000	0.34
Size of Business	–0.22	0.42	0.28	0.38	0.46	0.34	1.000

even in conventional management frameworks, future generations have a significant role in overcoming such reluctance. The implementation of financial tools through a planned integration mechanism must, therefore, address cultural values and geographical gaps in an attempt to make such integration effective and accessible. Policymakers and entrepreneurs must prioritize developing intergenerational collaboration, offering specific interventions for FOBs, and overcoming sector-related barriers in a move to maximize financial integration through technology.

The correlation matrix reveals that family-owned businesses (FOBs) are less likely to adopt digital financial tools (–0.50), reinforcing their reliance on traditional practices. However, generational involvement positively influences adoption (0.58), indicating that younger family members push for fintech integration despite resistance. The strong correlation between digital adoption and financial management improvements (0.76) confirms that fintech enhances efficiency and governance. Cultural values (0.52) and business size (0.42) moderately impact adoption, showing that larger firms and evolving cultural attitudes support digital transformation. These findings suggest that overcoming FOB resistance and leveraging generational shifts are key to fintech adoption in Jordan (Bueno et al., 2024).

Table 4. Reliability analysis (Cronbach's Alpha)

Construct	Cronbach's Alpha	Interpretation
Adoption of Digital Financial Tools	0.83	Good Reliability
Financial Management Practices	0.90	Excellent Reliability
Improvement in Financial Management Practices	0.88	Good Reliability
Generational Involvement	0.82	Good Reliability
Cultural Values	0.80	Acceptable Reliability
Size of Business	0.78	Acceptable Reliability
Type of Business	0.81	Good Reliability

The high reliability of Financial Management Practices (0.90) ensures stable measurement of financial governance, strengthening confidence in its impact on digital adoption. Adoption of Digital Financial Tools (0.83) and Improvement in Financial Management (0.88) show strong consistency, supporting accurate comparisons between family and non-family businesses. Generational Involvement (0.82) and Cultural Values (0.80), although reliable, reflect subjective variations, requiring careful interpretation. The lower reliability of Size of Business (0.78) suggests variability across industries, necessitating control measures. Overall, the results are robust, but cultural and generational effects should be interpreted with caution (Koskelainen et al., 2023).

Table 5. Convergent validity (AVE and sqrt(AVE) values)

Construct	AVE	Sqrt (AVE)
Adoption of Digital Financial Tools	0.65	0.81
Financial Management Practices	0.70	0.84
Improvement in Financial Management Practices	0.69	0.83
Generational Involvement	0.63	0.79
Cultural Values	0.60	0.77
Size of Business	0.64	0.80
Type of Business	0.62	0.79

The high AVE values (>0.50) confirm strong convergent validity, ensuring constructs reliably measure their intended concepts. Financial Management Practices (0.70 AVE, 0.84 sqrt(AVE)) and Digital Adoption (0.65 AVE, 0.81 sqrt(AVE)) show the strongest validity, reinforcing confidence in their impact on financial governance. Generational Involvement (0.63 AVE, 0.79 sqrt(AVE)) and Cultural Values (0.60 AVE, 0.77 sqrt(AVE)), although valid, indicate some subjective variation in perceptions. Size of Business (0.64 AVE, 0.80 sqrt(AVE)) remains reliable but may vary across industries. Overall, the results support the study's robustness, but cultural and generational effects should be interpreted with caution (Gunawan et al., 2023).

The results in Table 6 confirm that fintech adoption improves financial management practices ($\beta = 0.85$, $p < 0.01$), but the negative quadratic term ($\beta = -0.45$, $p = 0.01$) indicates diminishing returns – early adoption yields significant benefits, while additional adoption provides smaller gains. FOBs adopt fintech more slowly than non-family businesses ($\beta = -0.28$, $p = 0.04$), with younger generations driving adoption ($\beta = 0.52$, $p < 0.01$). Cultural values ($\beta = 0.40$, $p = 0.03$) and business size ($\beta = 0.22$, $p = 0.05$) also promote fintech use. The adjusted R^2 of 0.76 and F-test ($p = 0.01$) confirm the quadratic model's better fit. These find-

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Table 6. Non-linear effects (quadratic effects) analysis

Variable	Mean	Median	S.D.	Min	Max	Coefficient (β)	Standard Error	p-value
Fintech Adoption (0–1 scale)	0.68	0.70	0.40	0.10	1.00	0.85	0.15	<0.01
Fintech Adoption²	0.51	0.49	0.38	0.01	1.00	–0.45	0.12	0.01
Financial Management Practices (1–5)	4.30	4.25	0.60	3.00	5.00	–	–	–
Business Type (1 = FOB, 0 = Non-FOB)	0.72	1.00	0.45	0.00	1.00	–0.28	0.10	0.04
Generational Involvement (1–5)	3.85	4.00	0.72	2.00	5.00	0.52	0.08	<0.01
Cultural Values (1–5)	4.25	4.20	0.50	3.50	5.00	0.40	0.11	0.03
Business Size (Employees)	265.00	250.00	90.00	100	500	0.22	0.09	0.05

Table 7. Latent interaction analysis

Variable	Mean	Median	S.D.	Min	Max	Coefficient (β)	Standard Error	p-value
Business Type (FOB = 1, Non-FOB = 0)	0.72	1.00	0.45	0.00	1.00	–0.50	0.14	0.02
Generational Involvement (1–5)	3.85	4.00	0.72	2.00	5.00	0.68	0.12	<0.01
Business Type × Generational Involvement (Interaction Term)	–	–	–	–	–	0.42	0.10	<0.01
Cultural Values (1–5)	4.25	4.20	0.50	3.50	5.00	0.30	0.11	0.04
Business Size (Employees)	265.00	250.00	90.00	100	500	0.25	0.09	0.03

ings highlight the need for strategic fintech adoption to optimize benefits, especially in FOBs (Yang & Jung, 2024).

The results in Table 7 indicate that FOBs are less likely to adopt fintech compared to non-FOBs ($\beta = -0.50$, $p = 0.02$). However, the significant interaction term ($\beta = 0.42$, $p < 0.01$) confirms that younger generations accelerate fintech adoption in FOBs, mitigating resistance to digital transformation. The strong positive effect of Generational Involvement ($\beta = 0.68$, $p < 0.01$) further supports this, showing that as younger family members become more involved, fintech adoption increases. The adjusted R^2 of 0.72 and F-Test significance ($p < 0.01$) confirm that the model effectively explains variations in fintech adoption. These findings suggest that intergenerational collaboration plays a crucial role in driving fintech integration in FOBs (Hasan et al., 2024).

The results in Table 8 indicate that fintech adoption is significantly influenced by generational involvement and business type. FOBs are less likely to adopt digital financial tools compared to non-FOBs ($\beta_2 = -0.380$, $p = 0.002$), reinforcing the idea that traditional management structures slow digital transformation. However, the positive and significant interaction term ($\beta_9 = 0.220$, $p = 0.000$) confirms that younger generations accelerate fintech adoption in FOBs, reducing resistance and driving digital integration (Cardoso et al., 2024).

Table 8. Regression analysis results for digital financial tool adoption

Variable	Coefficient (β)	Standard Error	t-Statistic	p-Value	Significance
Intercept (β_0)	2.750	0.120	22.92	0.001	***
Adoption of Digital Financial Tools (β_1)	0.520	0.045	11.56	0.000	***
Type of Business (β_2)	–0.380	0.060	–6.33	0.002	***
Generational Involvement (β_3)	0.310	0.035	8.86	0.001	***
Cultural Values (β_4)	0.230	0.028	8.21	0.001	***
Adoption of Digital Tools × Generational Involvement (β_5)	0.180	0.018	10.00	0.000	***
Type of Business × Cultural Values (β_6)	–0.140	0.032	–4.38	0.003	***
Size of Business (β_7)	0.095	0.018	5.28	0.004	***
Industry Type (β_8)	0.135	0.022	6.14	0.003	***
Business Type × Generational Involvement (β_9)	0.220	0.020	11.00	0.000	***
R^2	0.82				
Adjusted R^2	0.81				
F-statistic	105.30			0.000	***

Table 9. Multi-group analysis (MGA) results

Variable	FOB Mean Coefficient	Non-FOB Mean Coefficient	Difference	p-value
Intercept	–0.0212	0.0254	–0.0466	0.872
Adoption of Digital Financial Tools (DFT)	0.3123	0.1958	0.1165	0.039
Generational Involvement (GI)	0.2654	0.1082	0.1572	0.015
Cultural Values (CV)	–0.0584	–0.0135	–0.0449	0.028
Size of Business (SB)	0.1021	0.1015	0.0006	0.460
Financial Management Practices (FMP)	0.7658	0.7823	–0.0165	0.532

Additionally, generational involvement independently enhances fintech adoption ($\beta_3 = 0.310$, $p = 0.001$), indicating that businesses with greater participation from younger family members are more likely to implement digital financial tools. Cultural values also play a role ($\beta_4 = 0.230$, $p = 0.001$), but their interaction with business type ($\beta_6 = -0.140$, $p = 0.003$) suggests that FOBs with stronger cultural traditions may face additional barriers to adoption (Idrees & Ullah, 2024).

The high adjusted R^2 (0.81) and significant F-statistic ($p = 0.000$) confirm that the model effectively explains variations in fintech adoption. These findings highlight the importance of intergenerational collaboration in accelerating digital transformation within FOBs.

The Multi-Group Analysis (MGA) results in Table 9 show that FOBs benefit more from digital financial tool adoption than non-FOBs ($\beta = 0.3123$ vs. 0.1958, $p = 0.039$), despite being slower adopters. Generational involvement has a stronger impact on FOBs ($\beta = 0.2654$ vs. 0.1082, $p = 0.015$), confirming that younger family members drive fintech adoption by overcoming resistance from older generations.

Cultural values hinder adoption more in FOBs ($\beta = -0.0584$ vs. -0.0135, $p = 0.028$), reflecting their greater emphasis on stability and risk aversion. Business size influences adoption equally in both groups ($\beta = 0.1021$ vs. 0.1015, $p = 0.460$), indicating that larger firms, regardless of type, are more likely to integrate digital tools.

Both groups exhibit considerable improvement in financial management, with a minor margin in favor of Non-FOBs ($\beta = 0.7823$ over 0.7658, $p = 0.532$), possibly due to having well-established financial structures. All these highlight the youth's key role in driving fintech adoption in FOBs, in a position to overcome cultural resistance and make full use of digital transformation (Idrees & Ullah, 2024).

The study considers the use of financial tools in Jordanian family-owned (FOBs) and non-family-owned (non-FOBs) companies. Such instruments, while effective, manageable, and transparent, have not yet become widespread in FOBs, with cultural hesitation, conventional financial practice, and family governance structures holding them in check.

Consistent with previous research, such studies validate that FOBs prioritize stability and governance over efficiency and will therefore not hasten the use of fintech (Jansen et al., 2023; Upadhyay et al., 2023). In agreement with Basly and Hammouda (2020), in most scenarios, in-house financing and informal administration prevail in FOBs, and their use is therefore curtailed. In contrast to Ahmad et al. (2024), who found that non-family firms adopted fintech with ease, in this study, when fintech is utilized in FOBs, its use positively affects financial performance ($\beta = 0.3123$ in contrast to 0.1958, $p = 0.039$). This validates that even when FOBs transition to fintech, their use yields significant financial improvements.

FOBs' hesitation in embracing fintech is a result of prioritizing long-term control and family heritage maintenance. Consistent with Suddaby and Jaskiewicz (2020), in this study, FOBs have a lesser propensity for adopting digital tools ($\beta = -0.50$, $p = 0.02$), in view of increased transparency jeopardizing family independence. Younger family members, nevertheless, drive change, with family members' contribution in terms of age having a strong effect in terms of fintech acceptance ($\beta = 0.52$, $p < 0.01$). Business type and

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family members' contribution in terms of age ($\beta = 0.42$, $p < 0.01$) reveal that with increased contribution of family members in terms of age, digital acceptance increases, in agreement with Forcellati et al. (2021) and Laique et al. (2023).

The analysis reveals diminishing returns in fintech applications ($\beta = -0.45$, $p = 0.01$). With early application enriching finance, over-digitization brings complications, downscaling gain. There will have to be a phased development.

To maximize use in FOBs, phased rollout, senior members' computer competency, and intergenerational collaboration have to become a high concern. Government incentives in terms of training grants, for instance, or tax incentives can bridge financial and educational gaps between technology and older adults. Long-term impact and affective and cultural resistance have to be considered in future studies. Overcoming such obstacles, FOBs can combine technology with a strong preserve of values and competitiveness in a digital world.

CONCLUSION

The current study examined the adoption and effectiveness of digital financial tools across Jordanian family-owned businesses (FOBs) as opposed to non-family-owned businesses, with a specific emphasis on the moderating effect of generational involvement. The data confirmed that while adoption of digital tools is slower among FOBs – attributable primarily to cultural resistance and a preference for customary practices – they realize larger improvements in their financial management after adoption than non-FOBs (31.2% compared with 19.6%).

Involvement by generations dramatically improves adoption, with younger generations as drivers of digital change, bridging resistance gaps and improving integration success. Business types interacted with generations, helping to improve adoption by 22% in FOBs, confirming that youth is a decisive factor in crossing heritage barriers.

In addition, while adoption benefits finance, the study indicated downward-sloping returns as the level of fintech implementation rose, calling for phased, strategic implementation instead of swift overhauls. Cultural values and company size proved to be contributory factors in influencing adoption behavior.

For Jordanian family businesses (FOBs) to be sustainably competitive, they need to innovate through the adoption of fintech to complement customary governance patterns and leverage the technological capabilities of the younger generation. This evolution calls for proactive participation of policymakers and banking institutions, both of whom can offer specialized training initiatives, fiscal benefits, and investment within digital infrastructure. These collective actions will be able to help Jordanian family businesses integrate successfully into the new digital age.

AUTHOR CONTRIBUTIONS

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Funding acquisition: Mohammed Othman.
Investigation: Mohammed Othman.
Methodology: Mohammed Othman.
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Visualization: Mohammed Othman.
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