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The Effect of Innovation and Information Technology on Financial Resilience

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Abstract: This paper aims to examine the views of managers, accountants, and auditors on the impact of innovation and information technology on financial resilience, and answers the question of whether in today's businesses, which are rapidly changing and evolving and where events are unpredicted, organizations can increase their economic resilience through innovation and information technology. The research population was managers, accountants, and auditors of small and medium-sized companies in Razavi Khorasan in 2024, and the study was conducted with a questionnaire in both paper and electronic forms through in-person visits to the companies under research, where 357 auditors and 371 accountants and managers completed the questionnaire. The findings show that the innovation of products and services and the expansion of information technology increase the financial resilience of organizations. It is suggested that organizations increase the innovation of products and services and use information technology to eliminate and take effective action in dealing with possible risks. The findings suggest exciting facts about the effect of advanced digital space on financial resilience in organizations active in Iran's economy, as well as possible damages in this field that cause delays in digitalization and, as a result, the economic resilience of organizations.

Keywords: innovation; information technology; financial resilience

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1. Introduction

In today's turbulent and uncertain world, economic and social systems face many risks with low predictability, and human knowledge about their effects and consequences is small. The best way to deal with these risks is to improve financial resilience. Financial resilience is the ability to withstand life events that affect one's income or assets [1]. Financial resilience is a degree or score of an organization's capacity to align financial resources with operational activities and equip the organization to maximize company value. Financial resilience is an index to measure a company's ability to face unexpected cash flow events by borrowing from multiple and different sources, increasing capital, selling assets, and directing the organization's operations while facing unstable and changing conditions. In addition, financial resilience defines an organization's ability to take effective action to change the timing of cash flows in a manner that responds reasonably, appropriately, and adequately to unexpected events and opportunities. Based on this, accurate and sufficient information about current and future cash flows is the main factor in determining the financial resilience of organizations, especially companies [2]. Ref. [3] also documents that the importance of financial resilience is underestimated in accounting research. Financial resilience is important to leverage and assess for its determinants, as it helps companies withstand and recover from financial shocks and uncertainties, supports long-term financial sustainability and improvement, reduces the burden on consumers, and improves financial well-being. It might be counted as a key indicator of an organization's overall financial health and feasibility. Concerning these critical contributions driven by financial resilience,

the authors have investigated the determinants of this financial characteristic, including innovation and information technology.

In general, one of the crucial factors that have undoubtedly affected today's business world is the expansion of emerging technologies such as artificial intelligence, new generations of mobile data transmission, and financial technologies in the field of payment, capital market, financing, and insurance, which indicate a change of coordinates governing the traditional economy and the transition to the digital economy, and require having a suitable strategy to exploit the changes and adapt to the new conditions [1]. In this digitized space, there is a very intangible distinction between producer and consumer, and traditional and unchanging (static) paradigms have become changing (dynamic) paradigms that represent innovation and information technology [4]. According to most industry leaders, the function of digital technologies, from improving profit margins to enabling the entire business, is to create innovation and organizational transformation. Looking at this type of technology as a mere tool will not lead to success, and only its institutionalization in an organization can bring about change and deal with the ever-increasing threats from innovative businesses. Therefore, it is necessary to carry out organizational innovation with the comprehensive use of digital technologies.

In particular, organizational innovation means creating a new organization with structural and cultural characteristics that can coordinate emerging organizations and compete and develop [5]. Innovation is using mental abilities to create an idea or offer a new product or service. All organizations need new ideas and thinking to survive. New thoughts and ideas form the soul of an organization and save it from nothingness and destruction. In today's era, to survive and progress, maintain the status quo, and avoid stagnation and destruction, an organization must innovate and use creativity [1]. To survive in a turbulent and changing world, one must turn to innovation and creativity, and while recognizing changes and developments in the environment, prepare new and fresh answers to face them. In addition to being influenced by these developments, organizations can be formed in a desired way. Based on this, innovation can be considered an important and influential factor in the financial resilience of organizations. In addition, organizations' economic vulnerability due to economic and financial crises requires them to face and manage new crises by adopting economic and welfare measures, planning, and making policies that consider the current conditions. As a result, preparing to face these changes and risks, exploiting opportunities, and investing in improving financial resilience to deal with risks facing an organization is of particular importance [2]. Theoretically, there are several arguments linking innovation and improved financial resilience. For example, creating innovative financial products, services, and business models may lead to financial resilience in companies and organizations [6]. Innovation and agility may also help organizations to encounter financial and external shocks more resiliently [7]. Ref. [8] argues that, in organizations, innovation is a process that challenges the status quo and its maintenance through thinking and a new attitude toward the content of processes. It changes through the combination of the three factors of technology, environment, and organization, and in many areas such as product development, production, distribution processes, management methods, work methods, and organizational relations, and in general, can be defined and used in all human activities. Finally, Ref. [6] argues that establishing a culture that prioritizes innovation, experimentation, and continuous enhancement may offer advantageous capabilities to companies for developing their financial resilience in the long run.

In addition, regarding the importance of information technology in improving innovation and financial resilience, previous findings have suggested diverse theoretical frameworks. Ref. [9] argues that information technology can contribute to financial resilience by enhancing workforce contentment, organizational performance, and economic resilience. Refs. [10,11] identify three aspects of organizational readiness theory, including change commitment, change efficacy, and contextual elements, in explaining financial resilience. In general definitions, increasing technology can affect the ability to deal with external shocks, the adverse effects of external shocks, and thus economic resilience [12].

Researchers have pointed to implementing the digital business model and the need for innovation in the organization, and they have considered this quite complex. Still, the findings show that this can lead organizations to continuous success [13]. Also, Ref. [14] stated that information technology plays an essential role in organizations' innovation and thus leads to organizational transformation. In addition, Ref. [15] showed that advanced production technology in Iranian industries significantly affects productivity.

On the other hand, Ref. [5] stated that a resilient system should absorb temporary or permanent hazards and adapt to rapidly changing conditions. The question of whether innovation and information technology affect organizations' financial resilience arises. The answer to this question requires empirical investigation, which is the aim of the current paper. Observing studies that investigated various factors in the resilience of organizations, we can conclude that no study has investigated this challenge empirically. However, the findings of [5] partially point to this. The researchers believe that success in today's organizations' business environment requires innovation and the following information technologies. Their findings show that innovation and digitalization in developed economies can affect an organization's business strategies and, in addition, its various operational aspects, and innovation and the use of information technology make organizations resistant to financial shocks and increase their resilience. However, their research in developed environments with digital economies cannot be generalized to creating environments. Based on this, it can be claimed that the gap in this research, the impact of information technology innovation on financial resilience in organizations active in a developing economic environment like Iran, which wants to transition to digitalization, still needs a scientific answer. Therefore, this research aims to fill this scientific and practical gap and answer this question scientifically and empirically: how do innovation and information technology affect financial resilience in Iran's economic environment?

Investigating the impact of innovation and information technology on financial resilience in organizations suggests a significant contribution to the existing literature in several channels. Initially, despite the attempt of prior studies to explore some determinants of financial resilience, there is still a lack of supportive evidence regarding the impact of innovation and information technology on financial resilience. In this regard, scholars have revealed that financial resilience is enhanced by financial resources such as savings, health insurance, and a well-paying job [16]. Social capital also increases financial resilience. This scenario involves a support system of family, friends, co-workers, neighbors, and others who can help financially during difficult times. This situation is also possible for organizations. With these words, various factors influence financial resilience in organizations. Ref. [17] shows that consistency in production and sales, access to a reliable supply chain, management's environmental adaptability, regional dimensions, and social support from the government's side are among the determining factors in financial resilience at the market level. They also propose some elements such as flexibility, risk identification, income, foreign exchange benefits, innovation in presenting goods and services, firm size, and responsiveness of partners and beneficiaries inside and outside the organization, which are among the leading contributing factors at the organization and management levels. Finally, the staff's efficiency in using organization resources, shareholder staff, and learning culture in the organization are among the main contributing factors to financial resilience under the staff's influence. Other factors, such as financial literacy [18] corporate social responsibility positively influencing change readiness, corporate culture and values, systems thinking, resource–information linkages, leadership [19], financial knowledge, and greater financial inclusion in terms of having more bank accounts and holding more financial products [20] have also been introduced by prior empirical efforts. Thus, the current investigation is among the pioneer studies estimating the impact of innovation and information technology on financial resilience.

Secondly, the current study employs a unique statistical approach to meet its objectives. For this purpose, structural equation modeling is adopted to estimate the impact of innovation and information technology on financial resilience. Thus, the existing literature

might be improved to some extent by (1) capturing complex relationships among different aspects of innovation, information technology, and financial resilience at the same time; and (2) relying on intricated research designs, validated theories, and improved measurement validity, because structural equation modeling is known as powerful equipment facilitating the analysis and understanding of complex relationships between variables [20].

Finally, this paper may deepen our understanding by suggesting promising outcomes regarding its objectives, since innovation in information technology can be considered a critical factor in companies' continuity and financial stability.

The findings of this study might be in the interest of organizations and their managerial teams in several ways. First, companies may benefit from enhanced innovativeness, as creating innovative processes gives them more flexibility when facing challenges and market changes. Secondly, information technology allows organizations to respond quickly to environmental changes, benefit from accurate data for decision-making, and strengthen their financial resilience. Thirdly, the development of information technology will enable managers to adapt favorable business models to encounter environmental changes and implement innovative improvements in financial and administrative processes. Using such strategies, managerial teams can improve the performance of companies under their management and build a basis for increasing financial and economic added value. Based on this, the findings of this research can show exciting facts about the effect of advanced digital space on financial resilience in organizations active in Iran's economy, as well as possible damages in this field that cause delays in digitalization; as a result, the financial resilience of organizations can be identified to some extent.

In this text, the theoretical foundations and the explanation of the hypotheses are discussed. The methodology and the testing of the research hypotheses are discussed, and the findings are presented. Finally, in the discussion and conclusion sections, practical suggestions are presented based on the research results.

2. Theoretical Principles and Hypothesis Development

2.1. Literature Review

2.1.1. Resilience

Financial resilience is a degree or score of the organization's capacity to align financial resources with operational activities and equip the organization to maximize company value. Financial resilience is an index to measure the company's ability to face unexpected cash flow events by borrowing from multiple and different sources, increasing capital, selling assets, and directing the organization's operations while facing unstable and changing conditions. In addition, financial resilience defines an organization's ability to take effective action to change the timing of cash flows in a manner that responds reasonably, appropriately, and adequately to unexpected events and opportunities. Based on this, accurate and sufficient information about current and future cash flows is the main factor in determining the financial resilience of organizations, especially companies [2].

Resilience is an interdisciplinary concept in various sciences, including ecological, psychological, economic, organizational, and supply chain perspectives [21]. Resilience is not just passive resistance to harm or threatening conditions; a resilient person or organization is an active participant and builder of its surrounding environment. Resilience is the ability of an organization or a person to establish a biological–psychological–spiritual balance in the face of risky conditions [22]. Five characteristics increase the resilience of individuals and organizations in facing life's changes and challenges [23]. These five characteristics are positivity, focus, flexibility, organization, and being active.

Prior investigations have highlighted some other aspects of financial resilience. For example, the concept of financial resilience has gained significant traction in academic discourse, particularly within the context of a dynamic business environment [24]. Scholars like [9] emphasize that financial robustness, adaptability, and the ability to anticipate and recover from financial shocks are crucial for firms to weather unpredictable market conditions. Financial resilience empowers firms to survive and thrive in challenging

circumstances. It equips them with the capacity to harness competition, identify and seize opportunities, and navigate long-term challenges. Ref. [25] advocates for a strategy of "resilient austerity," indicating that firms must be financially prudent and adaptable to respond to emerging threats. Ref. [26] highlights the link between risk management and financial resilience. The authors argue that firms that can adapt their operations to a changing environment are better positioned to handle uncertainty and ensure their long-term viability.

The significance of financial resilience is particularly pronounced for small and medium-sized enterprises in developing economies [27] similar to Iran's. These firms often face prolonged periods of economic hardship. Building financial resilience allows them to adopt coping mechanisms like cost-cutting during economic downturns [28]. Additionally, proactive strategies like forming foreign alliances and strategically adjusting product offerings or business models can further enhance their competitive edge and enable them to weather economic storms. Thus, financial resilience is a key factor in ensuring organizational survival [29].

2.1.2. Innovation

Innovation is the correct implementation of creative ideas. Innovation is choosing the right ideas and correctly implementing the process of transforming them into products, services, and processes to achieve profit and growth. A high level of creativity is required if investors want to increase their innovation capacity. A new idea refers to understanding a new customer need or a new production method and is developed through gathering information from an entrepreneurial perspective. In applying a new idea in the form of a product, process, or service, attention should be paid to reducing costs and increasing productivity [5]. Innovation occurs when an idea is in the form of a product, process, or service from the technology cycle, and the stream of innovation can reach the points obtained with the help of continuous transformations in the organization. The need for innovation increases in a rapidly changing world. Therefore, innovation is necessary to grow, compete, and adapt to changing customer needs [13]. Another point about innovation that should be mentioned is the dimensions of the innovation space, including (1) product innovation, which means offering a new product or service by a business; (2) process innovation, which, unlike product innovation, aims to modify and improve the methods of production and supply of a product or service (the ultimate goal of process innovation is to enhance productivity); (3) innovation in the situation, which refers to change in the context in which the goods or services are offered; and (4) innovation in the paradigm that changes the mental model and logic of organizational behaviors. It should be noted that innovation does not necessarily fall into one of the above four dimensions. In other words, there is no clear boundary between innovation types; sometimes, these boundaries are blurred and even disappear [30]. Academics have also suggested that innovation might be key to ensuring firm survival. For instance, Ref. [31] indicates that higher R&D intensity and intellectual property are positively associated with firm survival and performance. Similarly, other studies have shown that intellectual property rights, like patents and trademarks, are also positively related to firm survival [32]. The authors analyzed the survival of British companies for 5 years and found that innovativeness is positively associated with the company's survival. Moreover, [33] suggested that extending innovation is prominent for ensuring a company's survival. Therefore, innovativeness is expected to play a critical role in increasing the probability of firm survival, which might be driven by financial resilience.

2.1.3. Information Technology

Information technology emphasizes the combined concept of two words: "digital" and "digitized." Some believe that digital technology is the opposite of analog technology. That is, analog technologies are technologies with low information and communication technology penetration. Conversely, the penetration rate of information and communication technology and electronic capabilities in digital technologies is high. However,

it should be noted that, in the digital age and after the fourth industrial revolution, the concept of digital technology has been redefined, and digital technology cannot necessarily be understood from its opposite point (i.e., analog technology). Therefore, it seems that the vital difference between analog technologies and digital technologies is in the field of digital technologies, electronic operational processes such as industrial networks and control systems, control networks, and sensor networks, and the digitization of these processes has a strong presence [5].

Information technologies offer distinct value propositions to a company's stakeholders, encompassing employees, customers, and investors [34]. However, successful adoption necessitates forging a shared vision among these stakeholders and fostering an environment for bold decision-making. This underscores the critical role of the information technology concept. Further scholars also demonstrate that digital resources may create a unique kind of value for each company that has the potential to revolutionize a company's financial and operational performance [35]. While organizations are increasingly acknowledging the need for information technology adoption, the reality is that digital transformation remains in its nascent stages [36]. A key factor in accelerating this pace of change might lie in achieving a strategic fit. By achieving this strategic fit, stakeholders may work towards a unified vision, fostering a more efficient and impactful digital transformation journey. Therefore, the idea of strategic fit between business strategy and operations might be a key driver of successful digital transformation that may guarantee a firm's performance.

2.2. Hypothesis Development

2.2.1. The Relationship between Innovation and Financial Resilience

Today, creativity is known as the secret of survival and the key to the success of individuals and organizations. Rapid global developments in science and technology, industry, management, and values and standards, in general, have prompted many successful organizations and companies worldwide to direct their goals, tendencies, and interests toward creativity. Therefore, the role of creativity and innovation in an organization is undeniable. In other words, today's organizations must be dynamic, and their managers and employees must be creative and innovative people to adapt the organization to these developments and respond to the needs of society [37].

Innovation is always an efficient factor in business growth and competition. In the past, an outstanding technological solution with the emergence of exceptional products was enough for success. But the rules of the game are changing in most industries. Empirical research has shown that business model innovation has a greater potential for success than product–process innovation. For example, Ref. [38] showed that business model innovators were six percent more profitable over five years than peers who innovated products and processes. The innovators do not decide the failure of the company. Ref. [22] presents a framework for business model innovation. In this model, business innovation affects at least two of the four dimensions of what, who, why, and how, while product innovation is only the result of efforts to innovate value proposition. Therefore, the purpose of the current research is business innovation. Innovation is creating anything new with an essential value for an individual, group, organization, industry, or society. In other words, using mental abilities to create a new idea, product, or service is innovation. All organizations need new ideas and fresh ideas to survive. New thoughts and opinions are breathed into an organization's body like a spirit, saving it from nothingness and annihilation. To survive, progress, and maintain the status quo, an organization must continue adopting newness and innovation to prevent stagnation and destruction. To be able to continue living in a turbulent and changing world, one must turn to innovation and creativity; while knowing the changes and transformations of the environment, one must prepare innovative and new responses to face them and, with the impact of these developments, influence them and give them the desired shape.

The relationship between business model innovation and financial resilience has been emphasized in some previous studies. Ref. [39] considers the response to opportunities

arising from innovative business models to depend on capacity building in organizational resilience. The financial sector is one of the essential sectors of the organization and is also affected by the environment, and on the other hand, based on [39] research, innovation can be considered one of the critical and influential factors in financial resilience. In addition, [40] believes that although the mechanism of "diversity" before creative destruction could preserve an organization's identity if creative destruction based on the creation or recording of some values is realized, the organization, through the flexibility mechanism in financial resilience, will achieve a level of coherence where agility will be realized (a balance between flexibility and agility). After creative destruction, the strategy of financially resilient organizations in using and recombining resources and participating in dynamic decision-making processes will lead to the effectiveness and formation of shortcut business models.

Furthermore, previous literature has proposed some other concepts to explain the responsiveness of financial resilience toward innovativeness [41,42]. First, improved financial performance due to innovativeness is likely to enhance financial resilience. For example, innovative products, services, or business models may assist companies in increasing their profitability and revenue streams, which in turn provides a stronger financial foundation and buffer against economic downturns. Second, innovation can also improve competitiveness, which necessitates financial resilience. Innovative approaches can give organizations a competitive advantage, enabling them to encounter market challenges and create financial resilience effectively. Third, innovation may also increase financial resilience by enhancing corporates' operational efficiency and effectiveness. Innovations in processes, technologies, or management practices can enhance a company's operational efficiency, reducing costs and improving productivity, which may boost financial resilience. Fourth, adaptability is another benefit of innovation on the journey of resilience creation. Innovative procedures, thinking styles, and enhanced capabilities may enable organizations to quickly adapt to changing market conditions, regulatory environments, or customer preferences. Such an agile characteristic can help an organization react more resiliently in tough conditions. Fifth, innovation may also help companies build their reputation and enhance their brands, both of which apply to increasing resilience in the market. Successful innovations can improve an organization's reputation and brand value, making it more attractive to customers, investors, and partners, resulting in a stronger financial position in the market. [43] investigated how financial innovation can bolster a bank's resilience through various mechanisms, including (1) enhanced risk management practices through the adoption of sophisticated risk assessment tools and hedging strategies; (2) strategic diversification into new markets and product offerings to mitigate risk concentration; (3) streamlined operational efficiency through automation and digitalization, enabling faster response times and cost reduction; (4) improved liquidity management techniques to ensure sufficient cash flow during periods of stress; (5) maintaining adequate capital buffers to absorb potential losses and maintain solvency; (6) enhanced access to funding sources through innovative financial instruments; and (7) effective regulatory compliance to mitigate the risk of regulatory sanctions and reputational damage.

The existing literature shows that innovation can be an essential factor in increasing financial resilience in organizations. However, the study has yet to mention this issue directly. Therefore, this claim is examined empirically in this research, as well as the economic environment of Iran, which is considered a developing environment. According to the stated theoretical foundations and background, the first hypothesis of the research is presented as follows:

H1. *There is a positive and significant relationship between innovation and the financial resilience of organizations.*

2.2.2. The Relationship between Information Technology and Financial Resilience

Information technology emphasizes the combined concept of two words: "digital" and "digitized." Some people believe that digital technology is opposed to analog technology. That is, analog technologies are technologies in which the level of penetration of communication and information technology is low. On the contrary, the penetration of communication and information technology and electronic capabilities is high in digital technologies. However, it should be noted that, in the digital age and after the fourth industrial revolution, the concept of digital technology has been redefined, and digital technology cannot necessarily be known through its opposite, analog technology. Therefore, it seems that the vital difference between analog technologies and digital technologies is that, in the field of digital technologies, electronic operational processes such as industrial networks and control systems, control networks, and sensor networks, and the digitization of these processes, have a severe presence [5]. Digital technology facilitates knowledge sharing through increasing coordination and communication and improving decision-making, which increases individuals' job performance and improves organizations' competitiveness [44,45]. Digital technologies can be divided into two categories: maintenance technologies and transformative technologies. Maintenance technologies are technologies whose application at any point in time in organizations does not lead to gaining a competitive advantage. Still, their absence can disrupt the daily activity of the organization. The internet is an excellent example of this type of technology. However, transformative digital technologies are those whose absence does not necessarily disrupt the performance of an organization, but their presence can lead to a competitive advantage [46]. This literature shows the importance and positive effect of information technologies on the effectiveness and improvement of an organization at the general level. One of the most essential parts of any organization is undoubtedly the financial part. The flexibility of this part can significantly contribute to the company's overall performance. In today's dynamic and turbulent world, changes in the business environment and the company's strategy may create the need to rethink its performance. On the other hand, today, factors such as competitiveness and existing crises affect the financial resilience of businesses. Investigating the financial resilience of a company is usually raised when a shock or crisis occurs. There is a decrease in financial performance in the company, and investigating the resilience of an institution or company can be influential in determining the company's readiness to deal with the crisis. Referring to the findings of some studies, information technology can be an essential factor in increasing the financial resilience of organizations. Studies state that organizations' economic vulnerability due to economic and financial crises requires them to face and manage new crises by adopting economic and welfare measures and planning and making correct policies considering the current conditions [14,47,48]. As a result, preparing to face these changes and risks, exploiting opportunities, and investing in improving financial resilience to deal with the risks facing an organization is of particular importance. Absorption of technological spillover and globalization can affect the ability to deal with external shocks, the adverse effects of external shocks, and, as a result, economic resilience. Digital platforms can improve interaction and consumer experience and minimize innovation risk through digital experimentation [49]. Digital platforms benefit companies in the sense that they foster digital innovation and business model change [49,50] and enhance the capabilities of digital entrepreneurs to adapt to changing markets [49] quickly.

The findings of [5] state that a resilient system must be able to absorb temporary or permanent risks and adapt to rapidly changing conditions, and accordingly, suggest that information technology is one of the most critical and up-to-date factors that can increase the financial resilience of an organization. The findings of these studies indirectly indicate the influence of information technology on an organization's financial resilience. In other words, information technology increases the financial resilience of organizations. However, by carefully examining the studies, it is shown that research has yet to empirically investigate the effect of information technology on an organization's financial resilience.

Scholars also believe that, in contrast to traditional finance, internet finance and digital finance offer distinct advantages, such as reduced informational and transactional costs and efficient services, leading to enhanced benefits for consumers and investors. These innovative financial approaches have significantly improved access to finance in the traditional small and fragmented long-tail market through technology-driven advancements. By leveraging the capabilities of the internet and digital finance, the financial sector has been able to streamline processes, reduce costs, and provide more effective services to a broader range of consumers and investors, all enhancing organizations' financial resilience. This shift towards technology-driven finance has optimized financial operations and democratized access to financial services, ultimately fostering a more inclusive and efficient financial ecosystem [51]. The findings of [52] indicate that digital finance significantly fosters innovation in green technology, with both the scope of coverage and the depth of utilization playing crucial roles in this process. Specifically, digital finance alleviates financial constraints that might otherwise hinder innovation in green technology, thereby encouraging business innovation in this area. Moreover, the study reveals that state-owned businesses and those located in eastern regions are more likely to experience a more pronounced impact from digital finance on green technology innovation, suggesting that regional and ownership factors can influence the effectiveness of digital finance in driving innovation in green technology. Ref. [53] demonstrates a growth in scholarly interest in this study's area, particularly in recent years. The bibliometric analysis focuses on three key uses and applications of technology in the accounting and auditing professions: the adoption of continuous auditing and monitoring in the audit profession, the use of software tools in the audit and accounting professions, and the connections between information systems and auditing. Finally, several channels have been documented by previous researchers that may justify the application of information technology in improved financial resilience. In this regard, (1) improved operational efficiency, (2) ameliorated efficiency, (3) higher profitability, (4) proposed competitive advantages, and (5) expanded consumption and spillover effects are among the factors driven by information technology advancement assisting companies in establishing financial resilience [54–57].

Therefore, the current research aims to investigate the effect of technology and information technology on financial resilience. A hypothesis is proposed and proved through a suitable method to investigate this claim empirically. Based on this, the second research hypothesis is proposed as follows:

H2. *There is a positive and significant relationship between information technology and the financial resilience of organizations*.

3. Research Methodology

This research employs a practical approach, utilizing a survey method to gather data from the target population. This method, also known as the field method, involves collecting information through questionnaires distributed to a statistically relevant group. Survey research is particularly useful for (1) understanding current conditions, (2) helping to assess the present state of affairs within the population, and (3) identifying relationships by allowing researchers to explore potential connections between variables.

The collected data are analyzed using PLS statistical software SmartPLS 3. By analyzing this information, the research aims to achieve generalizability of the findings—meaning the results will be interpreted as applicable to the entire population, not just the sample surveyed. Moreover, this research focuses on analyzing the behavior and attitudes of participants, and the data collection occurs at a specific point in time (2024). This research aims to describe the current state of the phenomenon under investigation. The questionnaires were adapted to the business environment of Iran (Khorasan Razavi province) by removing irrelevant questions. A pre-testing process was conducted with four experts (audit and accounting professionals and academics) to ensure the questions' clarity, relevance, and

suitability within the Iraqi context. The collective agreement among experts on the wording, construct design, and overall questionnaire structure validates the measurement scales used in the research. Finally, Cronbach's alpha is used to assess the internal consistency and reliability of the questionnaire.

The research targets all auditors and accountants working in audit institutions and companies across Iran's business environment. They are considered the most knowledgeable group regarding the existence of financial resilience within the companies. The statistical population under study consists of 371 accountants and managers and 357 auditors, who were selected using a random sampling method. The questionnaires collected from them were applied to estimate the hypotheses. The tool for collecting information was a researcher-made questionnaire using a 5-option Likert scale. This sample size is justified by the auditors' expertise in the subject matter making them well equipped to respond to the survey questions.

4. Findings

4.1. Descriptive Statistics

Table 1 shows the frequency of demographic data (general part of the questionnaire). Three hundred fifty-seven people completed the questionnaire for the auditors' group, and 371 people completed the questionnaire for the accountants and managers' group. As shown in this table. Most of the respondents in the auditor group (more than 85%) are men. On the contrary, most of the respondents in the accountant group (more than 50%) are women. For both groups, more than half of people are under 30. In the group of auditors, about 45% are auditors, 25% are senior auditors, and 10% are supervisors. Of the group of accountants and managers, 83% are accountants, and 14% are chief accountants.

Table 1. Frequency of demographic data.

	No.	**Percentage**		**No.**	**Percentage**
	Auditors			**Accountants and Managers**	
	Gender			Gender	
Male	44	12.320	Male	192	51.750
Female	313	87.680	Female	179	48.250
	Age			Age	
20–30 years	187	52.380	20–30 years	206	55.530
31–40 years	131	36.690	31–40 years	141	38.010
50–41 years	29	8.120	50–41 years	22	5.930
More than 50 years	10	2.800	More than 50 years	2	0.540
	Position			Position	
Auditor	160	44.820	Accounting	308	83.020
Senior auditor	90	25.210	Head of accounting	54	14.560
Supervisor	37	10.360	Financial manager	9	2.430
Senior supervisor	29	8.120			
Technical manager	23	6.440			
Partner	18	5.040			
Total	357	100	Total	351	100

In Table 2, the results of the descriptive statistics of the responses received in the innovation section are presented separately for the two groups. According to the calculations in Table 2, the middle of innovation responses for both groups is the third option, "I have no opinion". The group of accountants and managers mostly selected option two, or "I agree". Only for questions 1, 4, and 5 of this group was the mode of the "completely agree" option calculated. For the group of auditors, the mode is 4 for six questions, and for one question, it is 5. Hence, most people disagree with these seven innovation questions. On the other hand, for three fashion questions, it is option 1, and for four, it is option 2. Therefore, most auditors agree with these seven questions. By comparing the averages of the two groups for

seven questions, the averages of the two groups are similar. For the other seven questions, the average of the two groups is different from each other, at least at the 95% level.

Table 2. Descriptive statistics of data related to innovation.

Question	Auditors				Accountants and Managers			
	Mode	Standard Deviation	Median	Mean	Mode	Standard Deviation	Median	Mean
Q1	4	1.438	3	2.927 **	1	1.44	3	2.760 **
Q2	4	1.365	3	3.174 **	2	1.329	3	3.011 **
Q3	4	1.394	3	3.070 **	2	1.403	3	2.911 **
Q4	1	1.391	3	2.747 **	1	1.377	2	2.588 **
Q5	1	1.443	3	2.961	1	1.445	3	2.837
Q6	1	1.5	3	2.904	2	1.445	3	2.834
Q7	2	1.301	3	2.793 ***	2	1.305	2	2.564 ***
Q8	2	1.367	3	3.112	2	1.356	3	2.976
Q9	4	1.413	3	3.110 **	2	1.446	3	2.932 **
Q10	2	1.345	3	2.806	2	1.354	2	2.663
Q11	2	1.397	3	3.008 ***	2	1.406	2	2.689 ***
Q12	5	1.389	3	3.163	2	1.385	3	3.027
Q13	4	1.347	3	3.259	2	1.316	3	3.119
Q14	4	1.248	3	3.262	2	1.268	3	3.134

Note: ** and *** indicate 95- and 99-percent significance levels, respectively.

In Table 3, the results of the descriptive statistics of the answers received in the information technology section are presented separately for the two groups: "I agree" is the average of 15 questions for the group of accountants and managers of the second option, and for one question of option one. The median has been calculated for 13 questions of the second option group of auditors, one question of option one, and "I have no opinion" for two questions, 11 and 12, the third option. The mode was also option one and two for both groups and option five only for the 12th question of both groups. Comparing the averages of the two groups shows that for 11 questions, the averages of the two groups are not significantly different. For questions 11, 13, 15, and 16, the average answer of the auditors' group at the 95% level was higher than the accountants' group, and the average answer to question 12 at the 99% confidence level was higher than the accountants' group. Therefore, it can be concluded that the level of satisfaction of the auditors' group for these five information technology questions is lower than that of the accountants' group.

Table 3. Descriptive statistics of data related to information technology.

Question	Auditors				Accountants and Managers			
	Mode	Standard Deviation	Median	Mean	Mode	Standard Deviation	Median	Mean
Q1	1	0.973	2	1.809	1	0.969	2	1.788
Q2	1	1.081	2	1.989	1	1.064	2	1.921
Q3	2	1.212	2	2.297	2	1.209	2	2.186
Q4	1	1.186	2	2.048	1	1.173	2	2.036
Q5	2	1.417	2	2.737	2	1.406	2	2.679
Q6	2	1.411	2	2.649	2	1.416	2	2.555
Q7	2	1.331	2	2.481	1	1.37	2	2.396
Q8	1	1.225	1	1.935	1	1.148	1	1.805
Q9	1	1.237	2	2.026	1	1.199	2	1.942
Q10	2	1.431	2	2.677	2	1.403	2	2.57
Q11	2	1.354	3	2.868 **	2	1.329	2	2.714 **
Q12	5	1.411	3	3.292 ***	5	1.447	3	3.070 ***
Q13	2	1.328	2	2.714 **	2	1.295	2	2.560 **

Table 3. *Cont.*

Question	Auditors				Accountants and Managers			
	Mode	Standard Deviation	Median	Mean	Mode	Standard Deviation	Median	Mean
Q14	2	1.271	2	2.283	1	1.288	2	2.169
Q15	2	1.316	2	2.441 **	2	1.283	2	2.271 **
Q16	2	1.271	2	2.304 **	2	1.247	2	2.152 **

Note: ** and *** indicate 95- and 99-percent significance levels, respectively.

In Table 4, the results of the descriptive statistics of financial resilience are presented separately for two groups. The average answers received by the accountants' group is 12 questions for the third option, 5 questions for the second option, and 1 for the fourth option. The average of the answers received by the group of auditors is 15 questions for the third option, two for the fourth option, and 1 for the second option. Therefore, the median of the group of auditors is more distinct than that of the group of accountants. The answers received by the accountants' group were 14 questions about the second option, three questions about the fifth option, and 1 question about the fourth option. The mode of answers received by the auditors' group is for 11 questions of the second option, four of the fifth option, and three of the fourth option. Again, the mode of the auditors' group is more distinct than that of the accountants' group.

Table 4. Descriptive statistics of data related to financial resilience.

Question	Auditors				Accountants and Managers			
	Mode	Standard Deviation	Median	Mean	Mode	Standard Deviation	Median	Mean
Q1	5	1.409	4	3.603	5	1.436	4	3.551
Q2	2	1.327	3	3.059	2	1.374	3	3.019
Q3	2	1.424	3	3.04	2	1.452	3	2.945
Q4	4	1.349	3	3.268	2	1.352	3	3.183
Q5	2	1.382	3	3.074	2	1.378	3	3.003
Q6	4	1.355	3	2.980 **	2	1.344	3	2.809 **
Q7	5	1.427	3	3.311	5	1.458	3	3.182
Q8	2	1.335	3	2.799	2	1.37	2	2.781
Q9	2	1.384	3	2.878	2	1.4	2	2.804
Q10	2	1.343	3	2.840 **	2	1.348	2	2.684 **
Q11	4	1.268	3	3.291	4	1.284	3	3.18
Q12	2	1.273	3	3.366 **	2	1.333	3	3.184 **
Q13	2	1.351	3	2.871	2	1.35	2	2.758
Q14	5	1.367	3	3.236	2	1.369	3	3.109
Q15	2	1.33	3	2.862	2	1.363	3	2.888
Q16	5	1.288	4	3.514 ***	5	1.408	3	3.202 ***
Q17	2	1.342	3	3.192 ***	2	1.4	3	2.922 ***
Q18	2	1.489	2	2.870 **	2	1.443	2	2.693 **

Note: ** and *** indicate significance levels of 95 and 99 percent.

The average answers received by the two groups for 12 questions are similar. The auditors' group average of six questions, including questions 6, 10, 12, 16, 17, and 18, is 95% higher than the accountants' group. Therefore, regarding these six questions, the answers received by the group of auditors were more opposed.

4.2. Inference from Data

Before examining the research hypotheses, the validity and reliability of the research questionnaire are examined. The results of these cases are shown in Table 5 in the form of indices of Cronbach's alpha coefficient, the composite reliability coefficient, and extracted average variance. First, Cronbach's alpha is used to calculate the reliability of the ques-

tionnaire. The alpha coefficient ranges from 0 to 1. The alpha coefficient for the designed questionnaire is equal to 0.917, which is in the appropriate range.

Table 5. Reliability and validity findings of the research.

Cronbach's Alpha	Composite Reliability Coefficient	AVE
0.917	0.895	0.728

In this research, the content and structure of the questionnaire were examined to evaluate its validity. To evaluate the validity of the convergence of the structure, the average variance index was extracted, and the Fornell and Larcker criteria were used. The AVE index in Table 5 states that the average extracted variance of each model dimension has a value greater than 0.5. Therefore, the convergent validity of the model is confirmed. According to Table 5, the AVE value for model variables is higher than 0.5, so it can be said that the convergence validity of the measurement model was used using the sharing index.

The goodness of fit indices has been used to evaluate the overall model of the fitted hypotheses with the observed data. The goodness of fit indices of measurement models are reported in Table 6. It can be concluded that the model fit is suitable for the data, and the results can be reliable.

Table 6. The goodness of fit criteria.

Index	Sign	Calculation	Acceptable	Ideal
χ^2 significance	χ^2	<0.002	$0.05 < p \leq 1.00$	$0.01 < p \leq 0.05$
Optimized chi-square	χ^2/df	2.013	$0 < \chi^2/df \leq 5$	$0 \leq \chi^2/df \leq 3$
Goodness of fit	GFI	0.901	$0.80 \leq GFI < 0.95$	$0.95 \leq GFI \leq 1.00$
Adjusted goodness of fit	AGFI	0.897	$0.80 \leq GFI < 0.95$	$0.95 \leq GFI \leq 1.00$
Root mean square residual	RMR	0.042	$0 < RMR \leq 0.10$	$0 \leq RMR \leq 0.05$
Comparative fit index	CFI	0.902	$0.90 \leq CFI < 0.97$	$0.97 \leq CFI \leq 1.00$
The root mean square of the estimation error	RMSEA	0.051	$0.05 < RMSEA \leq 0.08$	$0 \leq RMSEA \leq 0.05$

As mentioned earlier, to investigate the impact of innovation on the financial resilience of organizations and to investigate the impact of information technology on the financial resilience of organizations, the designed questionnaire includes three main sections: innovation, information technology, and financial resilience. It was prepared separately for the auditors and the accountants and managers. The innovation section includes 14 questions, the information technology section includes 16 questions, and the final section, resilience, includes 18 questions. Table 7 shows the named components and the number of questions that comprise each. Each of these components is obtained through averaging. In addition, in Table 7, Cronbach's alpha of each part of the questionnaire is calculated. The questionnaires have a suitable internal structure because Cronbach's alpha was between 0.894 and 0.943.

Table 7. Components: Number of questions, Cronbach's alpha, and factor analysis results.

Components	Questions	Cronbach's Alpha	Factor Analysis
Innovation	14	0.894	0.831–0.899
Information technology	16	0.908	0.645–0.978
Resilience	18	0.943	0.705–0.978

As clearly shown in Table 7, the amount of factor loadings between the indicators and their respective constructs is higher than the correlation between them and other constructs, which indicates the appropriate divergent validity in this model. In addition, Fornell and

Larcker's method has been used to determine the validity of divergence. Table 8 shows the results of this method.

Table 8. Matrix of divergent validity assessment by Fornell and Larcker method.

No.	Variable	1	2	3
1	Innovation			
2	Information technology	0.552		
3	Resilience	0.738	0.688	

Before other tests, the normality of research variables was checked by the Kolmogorov—Smirnov test. Table 9 shows the information related to the normality test of the model variables. According to the results, all the variables for the two groups (the auditors and the accountants and managers) have a normal distribution.

Table 9. The results of the normality test of the variables.

Variable	Level	Variable	Level
Auditors		Accountants and managers	
INV	0.551	INV	0.255
DTG	0.719	DTG	0.992
RES	0.960	RES	0.295

Note: The zero assumption is the existence of a normal distribution of variables.

Table 10 shows the descriptive statistics of each variable and their Latin equivalents separately for the two groups. It is worth mentioning that the questionnaire's participants include 357 auditors and 371 accountants and managers. According to the calculated average, innovation, information technology, and resilience for the group of accountants and managers have a lower average, meaning this group considers the effect of the three components more than the group of auditors.

Table 10. Descriptive statistics of hidden research variables.

Variables	Sing	Observations	Mean	Standard Deviation	Minimum	Maximum
Auditor's group						
Innovation	INV	357	3.022	1.034	1.000	4.786
Information technology	DTG	357	2.407	0.951	1.000	4.688
Resilience	RES	357	3.114	1.030	1.000	5.000
Auditors and managers' group						
Innovation	INV	371	2.861	1.044	1.000	5.000
Information technology	DTG	371	2.298	0.964	1.000	5.000
Resilience	RES	371	2.984	1.032	1.000	5.000

In Table 11, the correlation between the hidden components of the research has been obtained. All three main research components, including innovation (INV), information technology (DTG), and financial resilience (RES), have a positive effect on each other at the 99% confidence level. The correlation coefficient of innovation and financial resilience is equal to 0.775 for the group of auditors and 0.821 for the group of accountants and managers. Therefore, from the point of view of accountants and managers, innovation has a greater effect on financial resilience. The correlation coefficient of information technology and financial resilience is equal to 0.795 for the group of auditors and 0.801 for the group of accountants and managers. Therefore, from the point of view of the group of accountants and managers, information technology has a greater effect on financial resilience.

Table 11. Correlation matrix of hidden research variables.

RES	DTG	INV	
	Auditor's group		
		1.000	INV
	1.000	0.744 ***	DTG
1.000	0.795 ***	0.775 ***	RES
	Accountants and managers' group		
		1.000	INV
	1.000	0.786 ***	DTG
1.000	0.801 ***	0.821 ***	RES

Note: *** shows a significant level at 99%.

Table 12 shows the variance inflation factor (VIF) test is employed to assess multicollinearity among the main research variables. As indicated by the multicollinearity results of the two regression models, the VIF value for none of the variables in either model exceeds 5. Therefore, the two presented regressions do not exhibit any multicollinearity issues.

Table 12. VIF test results.

Variable	Model 1		Model 2	
	VIF	1/VIF	VIF	1/VIF
INV	2.250	0.444	2.640	0.379
DTG	2.270	0.441	2.650	0.377
Gender	2.310	0.433	1.610	0.620
Position	2.300	0.435	1.610	0.622
Age	1.020	0.979	1.010	0.992
Mean VIF	2.03		1.901	
Obs	357		371	

In Figures 1 and 2, the output and the effect of the hidden and apparent variables of the questionnaire are drawn according to the previous results to investigate the effect of innovation and digital technology on financial resilience by separating the two groups (the auditors and the accountants and managers). As shown in this figure, innovation and digital technology positively affect financial resilience for both groups and are significant at the 99% confidence level. Meanwhile, from the point of view of the group of accountants and managers, innovation is more effective in financial resilience. Also, digital technology has a greater effect on financial resilience from the point of view of the accountants and managers group than the auditors group.

After that, ordinary least squares (OLS) regression was used to investigate the relationship between innovation and information technology and lean resilience. In Table 13, the fitting results are shown separately for the two groups. In the first model, the data of the group of auditors was used. According to its results, the variable coefficient of innovation at the level of 99 percent confidence is equal to 0.485. Therefore, the first hypothesis of the research, since there is a positive and meaningful relationship between innovation and the financial resilience of organizations, is accepted for the group of auditors at the 99% confidence level. This means that increasing innovation is likely to improve corporate financial resilience. In this regard, several channels are proposed by prior findings [41,42]: (1) improved financial performance, as a result of innovativeness, is likely to enhance financial resilience (for example, innovative products, services, or business models may assist companies in increasing their profitability and revenue streams, which in turn provide a stronger financial foundation and buffer against economic downturns); (2) innovation can also improve competitiveness, which necessitates financial resilience, and innovative approaches can give organizations a competitive advantage, enabling them to effectively encounter market challenges and create financial resilience; (3) innovation may also increase

financial resilience by enhancing corporates' operational efficiency and effectiveness, and innovations in processes, technologies, or management practices can enhance a company's operational efficiency, reducing costs and improving productivity, which may boost financial resilience; (4) adaptability is another benefit of innovation on the journey of resilience creation, with innovative procedures, thinking styles, and enhanced capabilities enabling organizations to quickly adapt to changing market conditions, regulatory environments, or customer preferences, and such an agile characteristic can help an organization react more resiliently in tough conditions; and (5) innovation may also help companies build their reputation and enhance their brands, both of which apply to increasing resilience in the market. Successful innovations can improve an organization's reputation and brand value, making it more attractive to customers, investors, and partners, resulting in a stronger financial position in the market. In line with our findings, Ref. [39] considers the response to opportunities arising from innovative business models to depend on capacity building in organizational resilience. The financial sector is one of the essential sectors of the organization and is also affected by the environment, and, on the other hand, based on [39] research, innovation can be considered one of the critical and influential factors in financial resilience. Moreover, in banking sectors, Ref. [43] investigated how innovation can bolster financial resilience through various mechanisms, such as (1) enhanced risk management practices through the adoption of sophisticated risk assessment tools and hedging strategies; (2) strategic diversification into new markets and product offerings to mitigate risk concentration; (3) streamlined operational efficiency through automation and digitalization, enabling faster response times and cost reduction; (4) improved liquidity management techniques to ensure sufficient cash flow during periods of stress; (5) maintaining adequate capital buffers to absorb potential losses and maintain solvency; (6) enhanced access to funding sources through innovative financial instruments; and (7) effective regulatory compliance to mitigate the risk of regulatory sanctions and reputational damage.

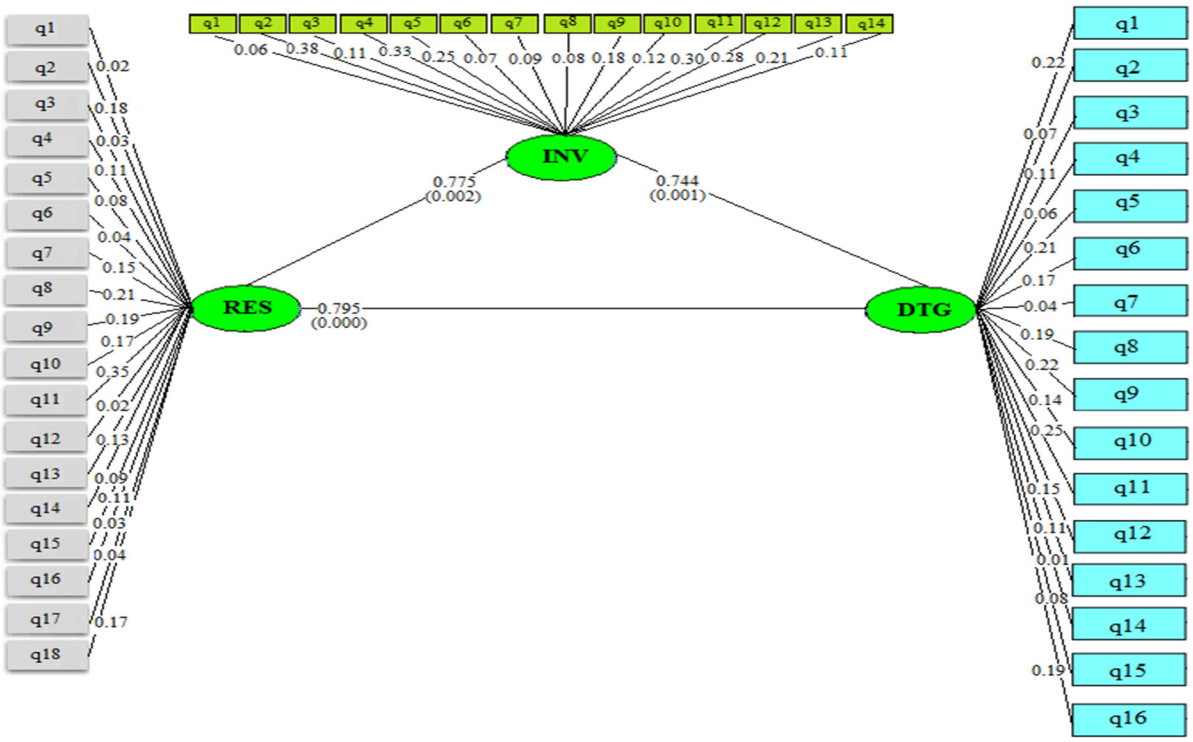

Figure 1. How the open and hidden variables of the questionnaire affect the auditors.

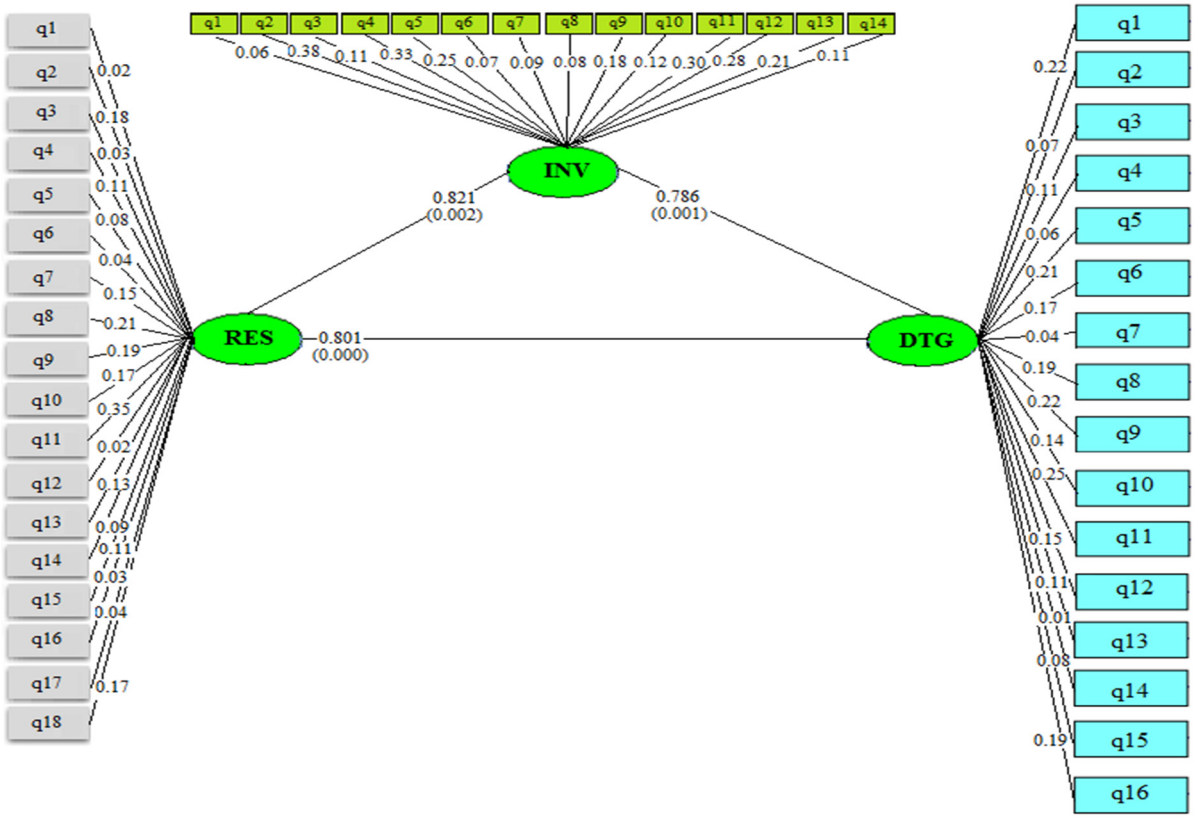

Figure 2. The effect of the open and hidden variables of the questionnaire for the group of accountants and managers.

Table 13. The resilience model fit by separating the two groups.

Variable	Model 1		Model 2	
	Coefficient	*p*-Value	Coefficient	*p*-Value
INV	0.485	0.000	0.555	0.000
DTG	0.558	0.000	0.464	0.000
Gender	0.154	0.052	−0.011	0.840
Position	−0.003	0.922	0.174	0.020
Age	0.093	0.121	0.064	0.247
Obs	357		371	
R2 Adj.	96.870		97.010	
F	2209.170	0.000	2407.790	0.000

The variable coefficient of information technology is also estimated to be positive and equal to 0.558. Therefore, the second hypothesis of the research, in the sense that there is a positive and significant relationship between information technology and the financial resilience of organizations, is accepted for this group at the level of 99% confidence. This means that companies that are more technological and use advanced equipment are more likely to be agile and resilient when facing difficulties and unexpected challenges. In this regard, previous findings also demonstrate that digital technology facilitates knowledge sharing through increasing coordination and communication, improving decision-making, increasing individuals' job performance, and improving organizations' competitiveness [44,45]. The flexibility of organizations, as a result of using information technology, can significantly contribute to a company's overall performance and resilience. In today's dynamic and turbulent world, changes in the business environment and a company's strategy may create the need to rethink its performance, particularly during crises and environmental difficulties. Accordingly, information technology can be an essential

factor in increasing the financial resilience of organizations. Studies state that organizations' economic vulnerability due to economic and financial crises requires them to face and manage new crises by adopting economic and welfare measures and to plan and make correct policies considering the current conditions [14,47,48], all of which require using advanced technologies within the organizations. By leveraging the capabilities of the internet and digital finance, the financial sector has been able to streamline processes, reduce costs, and provide more effective services to a broader range of consumers and investors, all enhancing organizations' financial resilience [51]. Ref. [52] indicates that digital finance significantly fosters innovation in green technology, with both the scope of coverage and the depth of utilization playing crucial roles in this process, which is likely to increase the resilience of companies during difficulties associated with global warming. Finally, factors such as (1) improved operational efficiency, (2) ameliorated efficiency, (3) higher profitability, (4) proposed competitive advantages, and (5) expanded consumption and spillover effects might be driven by information technology advancement assisting companies to establish financial resilience [54–57].

In the second model, the data of the group of accountants and managers have been used. According to its results, the coefficient of innovation variable at the level of 99 percent confidence is equal to 0.555. Therefore, since there is a positive and significant relationship between innovation and the financial resilience of organizations, the first hypothesis is accepted for the group of accountants and managers at the 99% confidence level. Accordingly, these findings show that there is no significant difference between the perception of accountants and auditors in terms of organizations adopting innovative strategies to improve financial resilience. The variable coefficient of information technology is also positive and equal to 0.464. Therefore, the second hypothesis of the research, in the sense that there is a positive and significant relationship between information technology and the financial resilience of organizations, is accepted for this group at the level of 99% confidence. These findings also underscore that there is no significant difference between the perception of accountants and auditors in terms of adopting information technology to facilitate financial resilience in organizations. Among the control variables of the model, it can be said that the financial resilience of the auditor group among men is higher than that of women at the 90% confidence level. Also, the higher the job position, the greater the financial resilience of the group of accountants and managers at the 95% confidence level.

Table 14 shows the fitting results separately for two groups according to the regression's structural equation modeling approach. In the first model, the data of the group of auditors was used. According to its results, the variable coefficient of innovation at the level of 99 percent confidence is equal to 0.408. Therefore, the first hypothesis of the research, since there is a positive and meaningful relationship between innovation and financial resilience of organizations, is again accepted for the group of auditors at the 99% confidence level. The variable coefficient of information technology is also estimated to be positive and equal to 0.0.529. Therefore, the second hypothesis of the research, in the sense that there is a positive and significant relationship between information technology and the financial resilience of organizations, is accepted for this group at the level of 99% confidence. In the second model, the data of the group of accountants and managers have been used. According to its results, the coefficient of innovation variable at the level of 99 percent confidence is equal to 0.494. Therefore, since there is a positive and significant relationship between innovation and the financial resilience of organizations, the first hypothesis is accepted for the group of accountants and managers at the 99% confidence level. The variable coefficient of information technology is also positive and equal to 0.438. Therefore, the second hypothesis of the research, in the sense that there is a positive and significant relationship between information technology and the financial resilience of organizations, is accepted for this group at the level of 99% confidence. The results reported in Table 14 confirm the findings of the OLS approach, indicating that the study's outcome is sufficiently robust.

Table 14. Robustness check for the resilience model fit by separating the two groups.

Variable	Model 1		Model 2	
	Coefficient	***p*-Value**	**Coefficient**	***p*-Value**
INV	0.408	0.000	0.494	0.000
DTG	0.529	0.000	0.438	0.000
Gender	−0.107	0.237	−0.056	0.313
Position	0.007	0.822	0.465	0.545
Age	0.008	0.886	0.004	0.942
Obs	357		371	
Var(e. Res)	0.308	0.230	0.278	0.204

5. Discussion and Conclusions

Financial resilience is defined as an organization's ability to do something practical to change the timing of cash flows in a way that responds reasonably, appropriately, and adequately to unexpected events and opportunities. On the other hand, using mental abilities to create an idea or offer a new product or service is an innovation. All organizations need new ideas and thinking to survive. New thoughts and ideas are blown into an organization's body like a soul and save it from nothingness and destruction. In today's era, for survival and progress, even to maintain the status quo, the flow of innovation and creativity in organizations is continued to avoid stagnation and destruction. Accordingly, the current paper aims to assess the impact of innovation and information technology on the financial resilience of organizations.

The research results showed a positive and significant relationship between innovation and financial resilience. To survive, today's organizations must be dynamic, and their managers and employees must be creative and innovative people to adapt the organization to existing developments and meet the needs of society [37]. This has improved the performance of organizations, and, as a result, leads to their resilience. The results of the research are in line with the findings of previous research such as [5], whose authors found that innovation and digitalization have an impact on various operational aspects and can increase resilience, and [44], whose authors found that digital technology to facilitate knowledge sharing through increasing coordination and communication and improving decision-making increases the job performance of individuals and improves the competitiveness of organizations. The research results also showed a positive and significant relationship between information technology and financial resilience. The research results align with the research findings of [14,16,45,49].

6. Practical Implications

Since the organizations studied in this research are exposed to market risk, currency risk, etc., it is suggested that organizations use experienced IT engineers, and, in line with innovation and the creation of new products and services, teach the organization's employees and engineers the most up-to-date science and technologies available worldwide. Also, ICDL training classes should be held for the organizations' employees.

It is recommended that companies predict the market's needs and customers' behavior by using up-to-date technologies so that they can produce and present to the market before the need develops and competitors begin production. Also, organizations should use new management systems for recruitment and evaluation systems, use the latest updates and renovations of applications, and provide resources for research and new projects to employees.

According to this research, innovation is associated with financial resilience in organizations. Therefore, creating and promoting an innovative culture in an organization can help strengthen financial resilience. This culture can include encouraging ideation, promoting innovative processes, and creating a dynamic work environment. Organizational leaders can also encourage team members to participate in innovative activities by expressing support for and stressing the importance of innovation.

The obtained information shows that information and communication technology (ICT) can play an essential role in increasing innovation and, as a result, financial resilience. It is suggested that organizations use new technologies such as hypergrids, artificial intelligence, and the Internet of Things to optimize processes and increase productivity. These technologies can be used in collecting and analyzing data and predicting market changes as essential tools for innovation and financial resilience.

There are also some policy implications attributed to our findings. Policymakers may encourage companies to strategically invest in IT infrastructure to enhance operational efficiency, adaptability, and competitiveness in the market, all of which may improve their resilience and agility. Policymakers may also support the development of digital financial agglomeration that combines digital information technology and traditional finance, which may positively affect economic resilience by expanding consumption and creating direct and indirect spillover effects on the economic resilience of regions. They should also incentivize companies to innovate across products, services, and business models, strengthening their financial resilience. Policymakers may consider the impact of financial drivers on regional economic resilience. Understanding the non-linear relationship between financial drivers and economic resilience is crucial. Policies should aim to balance the capacity of financial drivers to avoid inhibiting regional economic resilience as their capacity increases.

Our findings also have some implications for macroeconomists. As previously documented in the literature, macroeconomists may have a more accurate prediction when considering the impact of innovation and information technology on firm-level data; in this regard, Refs. [58,59] have documented that firm-level data have explanatory power in predicting macroeconomic indicators such as GDP growth dispersion and the unemployment rate. To be more precise, enhanced regional economic resilience is more likely to appear based on the investment in innovative and information technology infrastructures.

The current study suffers from some limitations. Questionnaire dependence is one of the main limitations of the paper; we acknowledge the inherent limitations associated with questionnaires. For example, respondents' perceptions of reality may not always accurately reflect actual practices. Some individuals may be unwilling to participate, potentially skewing the results. Respondents may provide answers they believe are socially desirable rather than truthful responses. When completing the questionnaires, respondents may express opinions depending on their mood or circumstances. Auditors may hesitate to express strong opinions, leading to overly conservative responses. However, the authors have implemented some controls to minimize the potential impact of these limitations. In this regard, we selected a population with relevant experience to bridge the gap between perception and reality. A larger sample size was employed to enhance the validity and generalizability of the findings. We reminded respondents to focus when completing the questionnaires, which may have helped to minimize bias.

Based on the findings of our paper, there are several avenues for future studies. Researchers may examine how government policies, stakeholder pressure, and banking practices affect the relationship between innovation and financial resilience, particularly in the different life cycles of organizations. Exploring the influence of board composition and characteristics on a company's innovation and information technology advancement may provide valuable insights for research. Developing more detailed questionnaires may capture a more nuanced picture of respondents' experiences and perceptions within their business environment.

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