



Economic Resilience of Rural Businesses: The Case of Damghan County (Iran)

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Article Info	ABSTRACT
Article type: Research Article	This study aims to identify and validate the key factors shaping the economic resilience of rural businesses and to develop an operational framework to support evidence-based policymaking in Damghan County (Iran). A mixed-methods research design with an exploratory sequential strategy was employed. First, Grounded Theory was applied through semi-structured interviews with 30 experts in rural development, enabling the identification of the principal dimensions of economic resilience. Then, a researcher-developed questionnaire was administered to 360 rural businesses selected through stratified random sampling from 86 villages in Damghan County. The validity of the instrument was confirmed through expert evaluation, while its reliability was verified using Cronbach's alpha ($\alpha = 0.887$). Data were analyzed using Exploratory Factor Analysis (EFA) to identify the latent dimensions of resilience and Confirmatory Factor Analysis (CFA) to evaluate the adequacy of the proposed measurement model. The EFA results revealed six interrelated dimensions that collectively explained 72.5% of the total variance in the economic resilience of rural businesses. These dimensions comprise access to financial resources (19.4%), institutional support (15.2%), diversification of economic activities (12.8%), entrepreneurial knowledge and skills (11.6%), market access (7.9%), and social capital (5.6%). The CFA results confirmed the robustness and satisfactory fit of the proposed measurement model. The overall economic resilience of rural businesses was rated at a moderate level, with a mean score of 3.12 on a five-point scale. Among the identified dimensions, access to financial resources achieved the highest mean score (3.58). In contrast, social capital demonstrated the lowest (2.47), indicating that strengthening local social networks and collaborative capacities remains a major development challenge. Rural businesses in Damghan County possess a moderate capacity to withstand and adapt to economic shocks; however, enhancing their resilience requires integrated policy interventions. The findings underscore the importance of strengthening institutional support mechanisms, improving access to financial resources, promoting economic diversification, expanding market opportunities, fostering entrepreneurial capabilities, and reinforcing social capital. The proposed framework offers a context-specific and empirically validated foundation for designing resilience-oriented rural development policies.
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Introduction

Rural sustainable development, as one of the fundamental pillars of regional planning, has in recent years been increasingly affected by economic and environmental fluctuations. In this context, economic resilience, understood as the capacity of systems to absorb, adapt to, and recover from external shocks, has become a central pillar of the survival of rural communities (Martin & Simmie, 2010). Owing to their structural dependence on natural resources and limited access to financial markets, rural businesses have consistently been vulnerable to unforeseen crises, highlighting the need for a fundamental reconsideration of prevailing development models (Sunley & Martin, 2015).

Recent studies published in reputable scientific journals conceptualize rural business resilience as a multidimensional capacity that extends beyond the short-term survival of businesses. More broadly, this concept refers to the capacity of farms, family businesses, cooperatives, rural producers, tourism operators, and other place-based enterprises to anticipate disruptions, absorb and manage shocks, adapt and adjust their operational activities, and capitalize on emerging opportunities. Existing research has commonly examined how rural businesses respond to climate-related events, market volatility, pandemics, supply-chain disruptions, labor shortages, technological change, and population decline.

Research indicates that, in addition to internal factors, such as human capital and businesses' financial resources, external factors and institutional support—including the establishment of support networks, access to markets, and access to external financial resources—play a decisive role in reducing vulnerability and strengthening the capabilities of rural businesses (Chirisa et al., 2021). Accordingly, incorporating these dimensions into the planning and management of economic enterprises is regarded as a fundamental prerequisite for achieving dynamism and competitiveness in rural economies (Varmazyari & Imani, 2017).

Despite the strategic importance of resilience, achieving and enhancing this capacity in rural areas of Iran is accompanied by numerous structural challenges. Damghan County, owing to its location along the margins of the desert and its exposure to severe climatic constraints, represents a tangible example of an area in which rural livelihoods are closely intertwined with environmental and economic vulnerability. In this region, predominant reliance on traditional and low-productivity economic activities underscores the necessity of developing resilience models that are appropriately adapted to the specific ecological setting and the socioeconomic characteristics of the county.

The present study aims to identify and explain the dimensions of economic resilience among rural businesses in Damghan County. To achieve this objective, the study employed a sequential mixed-methods approach to examine the components of resilience in depth while developing an operational framework for policymaking. In this regard, drawing upon the relevant literature and field-based analyses informed by the views of specialists and experts, various dimensions of resilience—including vulnerability, adaptation, sustainability, and the role of institutional support—were identified and subsequently examined using statistical tests.

The findings provide a framework for enhancing the region's economic capacity and may serve as a roadmap for planners seeking to implement targeted interventions grounded in the local realities of comparable areas across the country. The following provides the theoretical foundations and research background of this topic.

The economic resilience of rural businesses is a multilayered concept that has, over recent decades, evolved from the fields of ecology into economics and development studies (Sunley & Martin, 2015). Rather than being understood merely as a static return to a pre-crisis condition, as conceptualized within Resilience Engineering, the concept has been redefined

as “evolutionary resilience”—a capacity that enables systems not only to withstand shocks but also to reconstruct their development trajectories through adaptation and innovation (Hadjielias et al., 2022).

From the perspective of Complex Systems Theory (Manyena, 2006), rural businesses operate within an interconnected network of economic, social, and environmental interactions. Within this perspective, resilience emerges from nonlinear interactions among system components; consequently, a relatively minor shock to infrastructure or markets can generate cascading effects across other sectors (Tukamuhabwa et al., 2015). Accordingly, understanding resilience is not possible without analyzing social capital, because trust and networking function as “social glue” that facilitates businesses’ access to critical resources during periods of crisis (Naeiji et al., 2020).

In addition to external structures, individual-level variables also play a decisive role. Psychological capital, drawing upon components such as self-efficacy, individual resilience, and optimism, strengthens the capacity of economic actors to overcome critical constraints and escape crisis-induced deadlocks (Maddux, 2016; Lu et al., 2018). Ultimately, the theory of empowerment and sustainable livelihoods demonstrates that the economic resilience of rural businesses is the product of synergies between internal capabilities, such as skills and diversification, and the institutional context of an enterprise, including policies and infrastructure (Adger, 2006). In other words, rural resilience is realized when businesses are able to mobilize available resources—including human, financial, and social capital—to develop adaptive capacity.

Recent research on the economic resilience of rural businesses highlights the following orientations:

- Climate and environmental resilience: Recent studies have examined how droughts, floods, wildfires, soil degradation, and changes in growing conditions affect rural businesses. Many of these studies emphasize activity diversification, the adoption of water-saving technologies, insurance, access to climate information, and strengthened collaboration as strategies for reducing the vulnerability of rural businesses.

- Digital transformation: Recent research has increasingly examined the role of online sales, digital platforms, precision agriculture, remote services, and data-driven decision-making in strengthening rural business resilience. Digitalization can expand businesses’ access to markets and improve the efficiency of their operations. Nevertheless, limited access to and connectivity with digital infrastructure, high investment costs, and shortages of the required skills remain significant barriers in this regard.

- Financial resilience: Studies published in the fields of development, agriculture, and regional economics have examined issues such as liquidity, access to credit, government subsidies, risk management, and the role of local financial institutions in economic resilience. Small rural businesses are often more exposed to these vulnerabilities than other businesses because they possess fewer assets, have weaker bargaining power, and face more limited access to external financial resources.

- Entrepreneurship and diversification: A recurring finding across the literature is that businesses combining multiple income sources simultaneously may possess greater capacity to cope with shocks. Examples of this approach include agritourism, direct marketing of products to consumers, renewable energy production, food processing, and the provision of non-agricultural services.

- Local networks and institutions: Recent studies emphasize the importance of cooperatives, producer organizations, social groups, universities, extension services, and local government institutions in strengthening rural business resilience. Strong local networks can facilitate

the exchange of knowledge and information, collective purchasing, the use of shared infrastructure, and access to emergency support.

- Social and territorial dimensions: Recent literature increasingly associates business resilience with issues such as gender, succession and generational renewal, migration, social inclusion, and the quality of public services in rural areas. Accordingly, resilience cannot be regarded merely as an outcome at the level of an individual economic enterprise; rather, it should also be considered a fundamental attribute associated with the broader performance of the rural economy.

The studies conducted on rural business resilience are categorized below at two levels: domestic and international. In Iran, research on rural business resilience has predominantly approached the issue through the lenses of environmental crisis management and livelihood sustainability. Examples include the following studies:

Ghorbani et al. (2026), at a macro level, examined the effects of different dimensions of risk, including political, economic, and financial risks, on Iran's economic resilience over the period 1989–2021. Using a dynamic ordinary least squares model, their findings showed that economic and financial risks have significant negative effects on the resilience capacity of the economy. In contrast, strengthening human capital and increasing the degree of trade openness play effective roles in enhancing resilience and returning the economy to an equilibrium trajectory in response to domestic and external shocks. The study emphasizes the necessity of managing financial and economic risks as a prerequisite for maintaining sustainable economic performance.

Shayegh et al. (2026), in a study entitled Analysis of Barriers to Economic Activity Diversification in Rural Areas of Kunduz Province, Afghanistan, demonstrated that the urban–rural divide, educational deficiencies, shortages of technology and public goods, and skills-related barriers are among the most important constraints on economic diversification in rural areas. The findings indicate that supporting business development services, investing during transitional periods, and reducing perceived risk can contribute to strengthening the resilience and economic sustainability of rural populations. Javan and Naeimabadi (2025), in a qualitative study conducted in Masuleh, emphasized the importance of convergence between sustainable tourism business development and the preservation of historical heritage. Their findings demonstrated that achieving balanced development requires a systemic approach in which cultural, historical, physical, managerial, economic, and technological components operate in an integrated manner. The results further indicate that systematically strengthening these factors plays an important role in enhancing the resilience of local businesses and improving livelihood and managerial outcomes in rural communities. Mohammadlou et al. (2025), in an examination of villages in Mahneshan County, Zanzan Province, identified new dimensions of economic vulnerability in the face of climate change. Their findings, while identifying weaknesses in support infrastructure as a major factor exacerbating crises, emphasize that the development of supplementary businesses and the restructuring of cooperatives play a decisive role in restoring the resilience of rural households. Ghobadi et al. (2024), in a qualitative study employing grounded theory, demonstrated that the resilience model of tourism businesses in the rural areas of Hawraman can be explained through six dimensions: causal conditions, the central phenomenon, contextual conditions, intervening conditions, strategies, and consequences. Their findings indicate that foresight, opportunity orientation, marketing, and capacity assessment are among the key components of resilience strategies. The study emphasizes that intelligent management and planning aligned with local capacities play a fundamental role in empowering economic actors to adapt to environmental changes and sustain tourism businesses. Sanaei-Moghadam et al. (2024), in a study examining the effects of livelihood

diversification on the resilience of rural households in the rural hinterland of Dehdasht in response to climate change, found that livelihood diversification—particularly assets, savings, and social capital—plays an important role in enhancing the resilience of rural households. Their findings emphasize that strengthening income diversification can increase the adaptive capacity of rural communities in the face of climatic shocks.

Sargazi et al. (2024), in a study conducted in the Sistan region, found that farmers' resilience to drought was low and that factors such as income, supplementary capital, and place attachment play critical roles in enhancing resilience. They emphasized the necessity of empowering local communities. Hosseini-nia et al. (2022), in examining the resilience factors of the rural economy of eastern Gilan in response to floods, identified diversification of economic activities as a primary strategy. Malekan et al. (2021), in a study of Kangavar County, developed a drought management model based on a resilience approach and emphasized the importance of policymakers' attention to specific geographical conditions. Zahiri et al. (2021), through modeling the resilience of ecotourism businesses in Gilan, identified the risks associated with this sector and addressed ways of enhancing the operational capacity of businesses. Hasanvand et al. (2019), in an investigation of Sialkhor Rural District following an earthquake, identified strengthening economic capital and encouraging public participation as influential factors in economic resilience. Varmaziari and Imani (2017), in their analysis of rural businesses in Malekan County, demonstrated that a lack of resilience during the initial years of operation is a major factor contributing to the failure of small and medium-sized rural enterprises.

Most international studies in this field have increasingly shifted toward technological and network-based analyses. For example, Ember, Wilson, and Dale (2023) demonstrated in Australia that digital capabilities and telecommunications infrastructure play a key role in building the resilience of rural communities to natural disasters. Lundgren, A. S., and Nilsson, B. (2023) emphasized the role of voluntary initiatives, local responsibility, and distinctive rural identity in enhancing community resilience. Yang et al. (2022), through a spatiotemporal analysis in China, explained the role of economic and infrastructural drivers in the gradual yet uneven improvement of rural resilience. Hadjielias et al. (2022), in their examination of the COVID-19 pandemic, identified business agility and the mobilization of family resources as major determinants of small-business resilience. Chirisa et al. (2021) emphasized the need to integrate “resilience thinking” into policies governing rural human settlements. Rose (2011) defines economic resilience as the capacity of a system to absorb disruption, maintain essential functions, and recover through adaptive responses. In the context of rural businesses, this perspective emphasizes the importance of operational flexibility, access to alternative suppliers and markets, the availability of financial reserves, and access to coordinated support—factors that can reduce the magnitude of losses and accelerate the recovery process. Martin and Sunley (2015) conceptualize economic resilience as the capacity of a region to withstand shocks, adapt to changing conditions, and pursue new development pathways. In the context of rural businesses, this perspective highlights the importance of flexible operations, diversified markets, strong local networks, and institutional support. Such capacities enable businesses to absorb disruptions, adjust their strategies to changing conditions, and maintain their long-term survival. Briguglio et al. (2009) distinguish economic vulnerability, arising from exposure to external shocks, from resilience, which is understood as the capacity to withstand or recover from such shocks. From this perspective, rural business resilience depends on reducing exposure to shocks through diversification, strengthening adaptive capacity, and mobilizing local resources and support networks. These factors can help businesses maintain their operations during periods of economic disruption.

The Organisation for Economic Co-operation and Development (OECD, 2020) examines how rural areas can improve well-being by expanding access to quality employment, education, healthcare, digital connectivity, and essential services. The organization's report emphasizes that rural communities are highly diverse and require place-based policies that build upon local capacities and assets while also addressing geographical inequalities. The World Bank report entitled *Harvesting Prosperity: Technology and Productivity Growth in Agriculture* (2019) emphasizes the importance of technological innovations and productivity enhancement for improving agricultural production, strengthening food security, increasing rural incomes, and supporting sustainable economic development. The Food and Agriculture Organization (FAO, 2021) emphasizes that resilient agri-food systems can help rural businesses withstand shocks, sustain their activities, preserve their livelihoods, and return more rapidly to normal conditions. From this perspective, activity diversification, stronger market linkages, improved risk management, and reliable access to financial resources can contribute to strengthening the long-term economic resilience of rural businesses.

A review of the literature indicates that international studies emphasize the role of digitalization, business agility, local initiatives, and spatial inequalities in the development of resilience. In Iran, however, despite theoretical advances, domestic studies have focused primarily on the management of environmental crises, including droughts, floods, and earthquakes; the importance of livelihood diversification; infrastructural deficiencies; the role of cooperatives; and the necessity of context-specific policymaking. Numerous case studies, including those conducted in Damghan, Mahneshan, Hawraman, Masuleh, and other areas, have identified specific patterns and components. Moreover, most existing studies have been descriptive in nature, while operational models for measuring rural business resilience in specific areas facing unique climatic challenges remain limited. Therefore, there is a clear need for integrated (composite), measurable, and context-specific indicators for rural businesses that combine social, economic, institutional, and environmental dimensions. Given that no study has so far been conducted in Damghan County with a specific focus on business resilience and sustainable rural livelihoods, the present study seeks to identify the influential factors and develop a context-specific and applicable model for the region.

In summary, the theoretical and conceptual foundations of resilience indicate that the most comprehensive conceptualization should not regard resilience merely as a return to a previous state. Rather, it should encompass adaptation, innovation, and the reconstruction of development pathways. Within this conceptualization of resilience, the analysis of complex systems and economic–social–environmental interactions provides its theoretical foundation, incorporating two sets of factors: (a) internal organizational factors (capabilities), including access to financial resources, human capital, economic diversification, social capital, and infrastructure, which constitute the internal resources shaping the fundamental capacities of rural businesses; and (b) external organizational factors (institutional support), which, through interaction with internal capabilities, provide the enabling context for “adaptation, innovation, and recovery capacity” and ultimately contribute to enhancing the economic resilience of rural businesses (Figure 1).

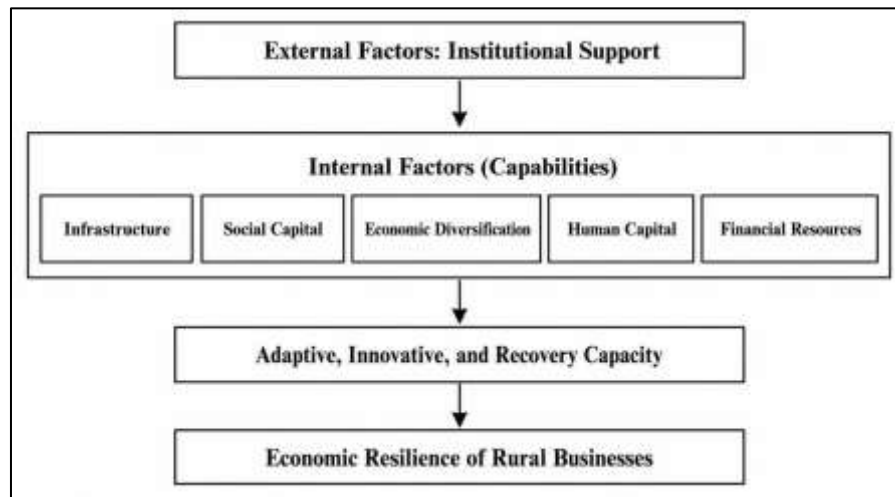


Figure 1. Conceptual model of the economic resilience of rural businesses

Source: Synthesis of the relevant literature reviewed

As illustrated in Figure 1, the economic resilience of rural businesses results from the interaction between two major categories of factors. First, internal factors (capabilities) include infrastructure, social capital, economic diversification, human capital, and access to financial resources, which function as the core components of internal empowerment. Second, external factors, referred to as institutional support, provide the necessary enabling environment. The synergy between these factors, expressed through “adaptation, innovation, and recovery capacity,” leads to enhanced economic resilience among rural businesses and contributes to the continuity of their development trajectories.

Methodology

Study Area Location

The study was conducted in Damghan County, located in Semnan Province, Iran. According to the latest administrative divisions, the county comprises two districts (Central and Amirabad), six rural districts (Howmeh, Damankuh, Rudbar, Qahab-e Rostaq, Qahab-e Sarsar, and Tuyeh Darvar), and 86 inhabited villages. Based on the 2016 National Population and Housing Census conducted by the Statistical Center of Iran, the rural population of Damghan County was 20,065, comprising 7,311 households (Figure 2).

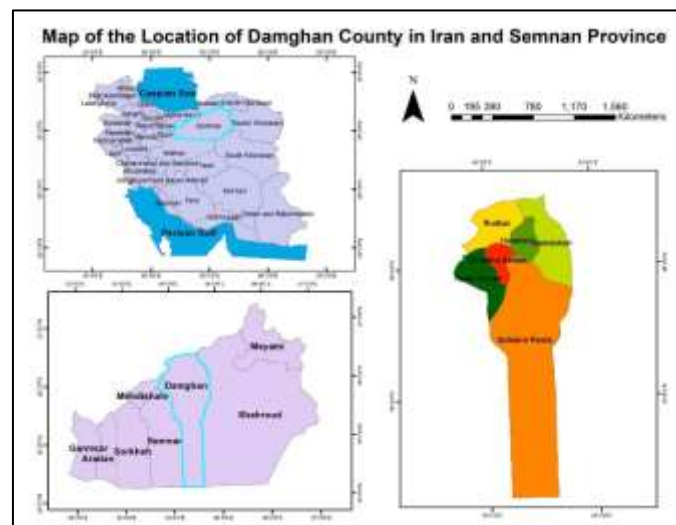


Figure 2. Location Map of the Study Area (drawn by the authors)

Research Methodology

The present study employs an exploratory sequential mixed-methods design grounded in a pragmatic paradigm. The research is conducted in two phases. In the first phase, semi-structured in-depth interviews are conducted with key informants until theoretical saturation is reached. The collected qualitative data are analyzed using thematic analysis, from which the main dimensions and components of the concept under study are identified. In the second phase, a conceptual model derived from the qualitative findings is tested quantitatively using stratified random sampling. The quantitative analysis includes both exploratory and confirmatory factor analyses, as well as reliability testing (e.g., Cronbach's alpha) to validate and strengthen the proposed model (Figure 3).

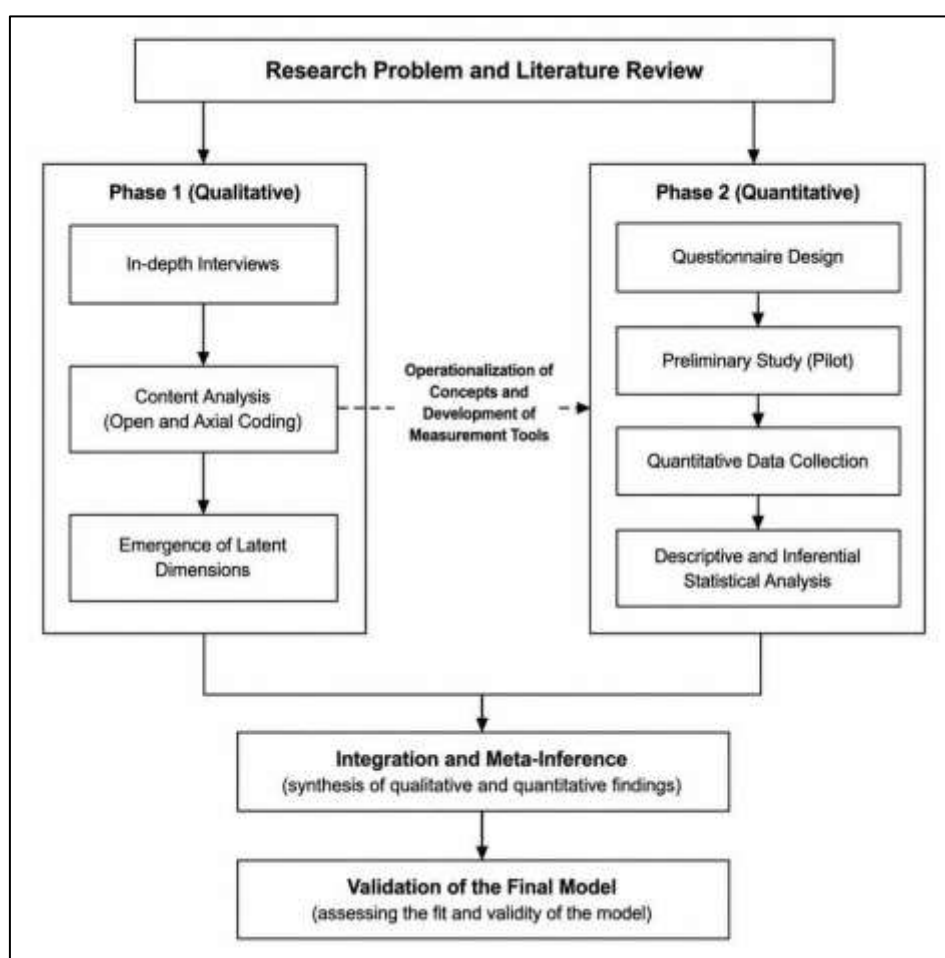


Figure 3. The process of conducting this research using a mixed-methods approach

In the qualitative phase, grounded theory was employed to identify emerging patterns and extract key concepts from the interview data. In the qualitative phase, the target population consisted of 30 experts and specialists in the field of rural development and economic activities in Damghan County, who were selected using the "purposive sampling" method until "theoretical saturation" was reached. This sample has maximum diversity among researchers, managers, and economic actors (agricultural and non-agricultural). The data collection tool in the qualitative phase was semi-structured interviews.

In the quantitative phase, the statistical population includes economic activists and employees in 86 villages in Damghan County. Using the Cochran formula and its modification for a population of 20,065 people, the final sample size was determined to be

377 people, which ultimately resulted in 360 valid questionnaires. Sampling was carried out using the "stratified random" method to ensure a balanced distribution of the samples and the generalizability of the findings to the entire county, taking into account the population variables and the number of households in the six rural districts. The questionnaires were completed by economic activists and employees in the villages. The data collection tool in this phase was a researcher-made questionnaire. It should be noted that, in the present study, rural businesses are defined as productive or service-oriented economic activities operating within the rural areas of Damghan County that rely primarily on local resources, including natural assets, agricultural land, livestock production, and indigenous capacities, to generate income and create employment opportunities for the local population.

The data analysis procedure was conducted in several stages. In the quantitative phase, the questionnaire data were analyzed using SPSS at both descriptive and inferential levels, including correlation and other relevant statistical analyses. Subsequently, exploratory factor analysis and confirmatory factor analysis were performed to identify and validate the underlying relationships among the factors influencing the economic resilience and operational sustainability of rural businesses. The face and content validity of the research instrument were confirmed through expert evaluation by 20 specialists in the fields of geography and agricultural economics, following the incorporation of their suggested revisions.

The reliability of the questionnaire was assessed using Cronbach's alpha coefficient. The overall reliability of the instrument was 0.887, while the reliability coefficients for the principal dimensions were 0.920 for the economic dimension, 0.926 for the institutional and organizational dimension, 0.856 for the social dimension, and 0.855 for the risk management dimension, indicating a satisfactory level of internal consistency.

Results and Discussion

A) Findings from the Qualitative and Quantitative Phases

Given that the present study was conducted in two distinct qualitative and quantitative phases within an exploratory sequential design, the characteristics of the samples are presented separately for each phase.

1. Technical and Professional Characteristics of the Experts (Qualitative Phase)

In the qualitative phase, the views of 30 experts and specialists in the field of rural development were elicited to identify the dimensions and components of the economic resilience model, using purposive role-based sampling. The criteria for selecting participants included a minimum of 10 years of research experience, practical experience in rural development projects, and relevant scholarly publications. The analytical characteristics of this group are presented in Table 1.

Table 1. Characteristics of the Research Participants (Qualitative Phase)

Indicator	Category	Frequency (n)	Percentage (%)
Educational attainment	Ph.D.	18	60
	Master's degree	12	40
	Total	30	100
Area of expertise	University professors and researchers	15	50
	Agricultural Office experts	10	33
	Executive and local managers	5	17

	Total	30	100
Years of professional experience	10–15 years	8	26
	More than 15 years	22	74
	Total	30	100

Source: Findings of the present study (2026)

As shown in Table 1, the majority of experts (74%) had more than 15 years of professional experience, while all participants possessed postgraduate qualifications (master's or doctoral degrees). These characteristics indicate the richness of the qualitative data and contribute to the robustness of the proposed model. Interviews with the experts continued until theoretical saturation was achieved.

1.1. Extraction of the Research Dimensions and Components (Qualitative Analysis Results)
At this stage, the key dimensions of economic resilience were identified through content analysis of the interviews conducted with the experts and a three-stage coding process comprising open, axial, and selective coding (Creswell, 2009). The findings revealed that the economic resilience of rural businesses in the study area is a multidimensional construct. Ultimately, six major categories were extracted as the fundamental pillars of the model, as presented in Table 2. These dimensions and components constituted the principal basis for developing the questionnaire items in the quantitative phase of the study.

Table 2. Dimensions and Components Extracted from the Qualitative Analysis (Basis of the Research Model)

Main Categories (Extracted Dimensions)	Identified Components and Codes (Derived from Interview Data)
Access to Financial Resources	bank loans and credit facilities, liquidity, credit funds, working capital
Institutional Support	government support policies, inter-organizational coordination, monitoring and support
Economic Diversification	non-agricultural activities, processing industries, rural tourism
Skills and Knowledge	specialized training, marketing management, creativity and innovation
Market Access	distribution networks, transportation infrastructure, local markets
Social Capital	local trust, collective participation, rural mutual-support networks

Source: Findings of the present study (2026)

2. Findings from the Quantitative Phase (Statistical Analysis)

Following the identification of the six dimensions in the qualitative phase, the research questionnaire was developed and distributed among 377 economic actors and individuals engaged in economic activities in rural areas. Ultimately, data from 360 completed questionnaires were entered into SPSS for analysis. The descriptive characteristics of the sample and the results of the statistical analyses are presented below:

Individual characteristics: The gender distribution of the respondents comprised 78.3% men and 21.7% women. The mean age of the respondents was 42.6 years, with a standard deviation of 11.2 years. Regarding educational attainment, the highest proportions were associated with secondary education (32.5%), below-secondary education (28.1%), bachelor's degrees (24.7%), and post-secondary non-degree qualifications (14.7%), respectively.

Occupational characteristics: The mean duration of business activity among the respondents was estimated at 13.8 years. The distribution of businesses by economic activity indicated that 52.2% were engaged in agriculture and livestock farming, 21.4% in the service sector, 15.8% in processing industries, and 10.6% in other economic activities.

B) Results of Exploratory Factor Analysis (EFA)

To identify and determine the underlying factors influencing the economic resilience of rural businesses, Exploratory Factor Analysis (EFA) was conducted using Principal Component Analysis (PCA) and Varimax rotation. The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy was 0.87, and Bartlett’s Test of Sphericity was statistically significant ($p < 0.001$), indicating adequate sample size and the suitability of the correlation matrix for factor analysis. Six factors with eigenvalues greater than 1 were extracted, collectively explaining 72.5% of the total variance in the variables. In order of importance, these factors were: access to financial resources (19.4% of variance), institutional support (15.2% of variance), economic activity diversification (12.8% of variance), entrepreneurial skills and knowledge (11.6% of variance), market access (7.9% of variance), and social capital (5.6% of variance).

C) Results of Confirmatory Factor Analysis (CFA)

Confirmatory Factor Analysis (CFA) was conducted to assess the validity and reliability of the proposed measurement model of economic resilience. The results indicated a satisfactory fit between the model and the empirical data, as confirmed by the following fit indices: the chi-square to degrees-of-freedom ratio (χ^2/df) was 2.41 (acceptable), the Goodness-of-Fit Index (GFI) was 0.91 (good), the Adjusted Goodness-of-Fit Index (AGFI) was 0.88 (acceptable), the Comparative Fit Index (CFI) was 0.93 (good), the Tucker–Lewis Index (TLI) was 0.92 (good), the Root Mean Square Error of Approximation (RMSEA) was 0.063 (acceptable), and the Standardized Root Mean Square Residual (SRMR) was 0.057 (good). Furthermore, all standardized factor loadings were greater than 0.50 and statistically significant ($p < 0.001$). Composite Reliability (CR) values for all dimensions exceeded 0.70, while the Average Variance Extracted (AVE) values were greater than 0.50, indicating satisfactory convergent validity and reliability of the measured dimensions.

D) Level of Economic Resilience among Rural Businesses

The overall mean score of economic resilience among rural businesses in Damghan County was 3.12 on a five-point scale, with a standard deviation of 0.78. This value indicates a moderate level of economic resilience among these businesses. Examination of the mean scores across the different dimensions of resilience showed that access to financial resources received the highest mean score (3.58), whereas social capital recorded the lowest score (2.47). This finding clearly indicates that, despite the presence of social capital among rural economic actors, these businesses are in a relatively more favorable position in terms of access to financial resources, which may constitute an important factor in enhancing their level of economic resilience.

The findings of this study demonstrate that the economic resilience of rural businesses in Damghan County is a multidimensional phenomenon influenced by six key factors: access to financial resources, institutional support, economic activity diversification, entrepreneurial skills and knowledge, market access, and social capital. These findings are consistent with previous studies on economic resilience. In particular, the importance of access to financial resources as the strongest determinant of economic resilience (19.4% of explained variance and a path coefficient of $\beta = 0.42$) is consistent with studies such as Varmaziari and Imani (2017), which examined the resilience of rural businesses in Malekan County, as well as Hasanvand et al. (2019), who investigated the factors affecting the economic resilience of rural settlements following an earthquake. These studies likewise emphasized the critical role of financial resources and access to credit facilities in the growth and sustainability of rural businesses.

Within the context of Damghan County, limited access to bank credit facilities, insufficient familiarity with informal financial institutions, and the absence of rural credit funds substantially constrain the capacity of businesses to invest, modernize, and innovate.

Institutional support, accounting for 15.2% of the explained variance and a path coefficient of 0.38, emerged as the second most influential factor. The findings indicate that institutional fragmentation, weak coordination among development-oriented organizations, and a lack of continuity in support programs have limited the effectiveness of interventions. This finding is consistent with the research of Chirisa et al. (2021), which examined institutional support policies for rural entrepreneurship, as well as Nel and Chirisa (2021), who emphasized the need to integrate “resilience thinking” into policy-making for the management of rural human settlements. In the study area, support programs are often ad hoc and short-term in nature and lack a systemic and integrated approach. Therefore, there is a clear need to establish a coordinating and supervisory structure—such as a “Damghan Rural Economic Resilience Development Council”—to consolidate these forms of support and enhance their effectiveness. This is consistent with broader approaches to regional resilience, in which Martin and Sunley (2015) likewise emphasized the importance of policy coordination and coherence.

Economic activity diversification also exerted a statistically significant effect on resilience (12.8% of explained variance and $\beta = 0.31$). This finding is consistent with domestic studies, including Saragzi et al. (2024), which examined the factors affecting the economic–environmental resilience of rural households, as well as Zahir(i) et al. (2021), who modeled the resilience of ecotourism businesses. In Damghan County, the predominant dependence of rural businesses on single-crop agriculture increases their vulnerability to market fluctuations and climatic changes. The still-limited expansion of non-agricultural activities, such as processing industries, tourism, and handicrafts, indicates that the strategic potential of diversification for reducing risk remains underutilized. This finding is also consistent with Yang, Jiao, and Zhang (2022), who emphasized the importance of diversification for rural resilience from a sustainable development perspective.

Entrepreneurial skills and knowledge (11.6% of explained variance and $\beta = 0.28$) were identified as another influential factor. This finding is consistent with international research such as Dale, Ember, and Wilson (2023), which highlights the role of digital capabilities and knowledge in enhancing resilience in rural areas. The shortage of specialized training in management, marketing, and emerging technologies among rural entrepreneurs in Damghan constrains their competitiveness and innovative capacity.

Market access (7.9% of explained variance and $\beta = 0.23$) and social capital (5.6% of explained variance and $\beta = 0.19$) also exerted positive and statistically significant effects on economic resilience. The findings concerning social capital are consistent with Nilsson and Lundgren (2023), who emphasized the role of voluntary initiatives and social capital in rural resilience. Although communication constraints and transportation infrastructure deficiencies make market access difficult, strengthening social capital—which recorded a mean score of 2.47—could enhance social networks and mutual trust in the region, thereby creating the potential for social capital to become a key resource for development.

Conclusion

This study demonstrated that the economic resilience of rural businesses in Damghan County is at a moderate level (mean = 3.12) and requires comprehensive strengthening, particularly in terms of access to financial resources and institutional support. The six identified factors collectively explain 76% of the variance in economic resilience, indicating the comprehensiveness of the proposed model. The findings underscore the necessity of

adopting a multidimensional and integrated approach to rural development policymaking. Fragmented and one-dimensional interventions are unlikely to generate sustainable improvements. This conclusion is consistent with the perspective advanced by Sunley and Martin (2015), who emphasized the need to consider multiple dimensions in conceptualizing regional resilience, as well as with the related approaches proposed by Pendall, Foster, and Cowell (2010) and Simmie and Martin (2010).

Based on the findings of this study, the following recommendations are proposed to enhance the economic resilience of rural businesses in Damghan County:

- Strengthening the financial support system: A multilevel financing system should be established and strengthened, encompassing microfinance facilities, rural credit funds, and local financial intermediary institutions. Such measures should be complemented by financial literacy programs, the promotion of a culture of saving, and enhanced collaboration between banks and rural cooperatives.
- Organizing institutional support: A unified coordinating structure, such as a Damghan Rural Economic Resilience Development Council, should be established to integrate development policies, programs, and projects. Strengthening synergies among governmental institutions, academic organizations, and non-governmental organizations is essential, an approach also emphasized by Chirisa et al (2021).
- Diversifying economic activities and developing value chains: Greater support should be provided for the development of agricultural processing industries, rural tourism, handicrafts, and knowledge-based businesses. The development of economic clusters and local markets can contribute to increasing value added and reducing dependence on traditional agriculture.
- Developing skills and promoting innovation: Comprehensive training programs should be implemented in entrepreneurship, business management, marketing, and the application of digital technologies, in collaboration with vocational training centers and Damghan University. This recommendation is consistent with the findings of Ember, Wilson, and Dale (2023) regarding the importance of digital capabilities.
- Strengthening social capital and local cooperation: The formation of effective cooperatives, specialized rural associations, and joint marketing networks should be encouraged to enhance economic cooperation, trust, and mutual support. This recommendation is in line with the emphasis of Nilsson and Lundgren (2023) on the role of such initiatives in strengthening rural resilience.

Research Limitations and Directions for Future Research

This study was subject to several limitations. First, its geographical focus on Damghan County necessitates caution when generalizing the findings to other regions. Second, the cross-sectional nature of the study limits the possibility of monitoring changes in resilience over time. Third, the study primarily focused on the perceptions of business owners, while the perspectives of other stakeholders, including institutions and customers, were not directly examined.

Accordingly, future studies are recommended to pursue the following directions:

- 1 .Comparative studies should be conducted across different regions of the country characterized by diverse climatic, economic, and social conditions. Such studies could provide a more comprehensive understanding of variations in rural business resilience patterns.
- 2 .The role of emerging technologies, entrepreneurial innovations, and the digital economy in strengthening the economic resilience of rural businesses should be investigated. The

importance of these dimensions has also been highlighted by Yang, Jiao, and Zhang (2022) and Ember, Wilson, and Dale (2023).

3 .Longitudinal studies should be undertaken to monitor changes in resilience over time and evaluate the effectiveness of policy interventions.

4. The role of different institutions—including governmental, local, and non-governmental organizations—in strengthening economic resilience should be examined from the perspective of good governance, drawing on the analytical frameworks proposed by Chirisa and Nel (2021).

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