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RISK MANAGEMENT AT THE LEVEL OF ROMANIAN SMALL AND MEDIUM-SIZED AGRICULTURAL BUSINESS - A SYSTEMATIC LITERATURE REVIEW

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Abstract

The small and medium-sized enterprise (SME) sector plays a crucial role in the economic framework, both at the national and European levels. Small and medium-sized firms (SMEs) are widely regarded as the most risk-averse ventures. Agricultural enterprises are particularly vulnerable to risk due to their strong reliance on climatic conditions. The objective of this study is to present a comprehensive analysis of the existing body of literature about risk management in small and medium-sized firms operating within the agricultural sector in Romania. Through a comprehensive and methodical examination of the specialist literature, following PRISMA 2020 guidelines a total of 16 out of 168 distinct publications found in the databases were deemed relevant and subjected to analysis. The study identified primary categories of risks encountered by these SMEs, including social, economic, environmental, market, production, operational, policy, technological, labor, knowledge, demographic, and resource risks. Additionally, various risk management methods were identified, including accessing public EU subsidies, recruiting skilled workers, offering home delivery services, engaging in risk-sharing mechanisms, implementing crop rotation methods, investing in new technology, and diversifying business operations. The study also highlighted internal factors, such as limited financial and technical resources, resistance to change, and fragmented approaches to risk management, as well as external factors like technological proliferation, regulatory changes, and market dynamics. The lack of comprehensive research in this field suggests a need for further investigation. This study provides a foundation for future research in risk management for agricultural SMEs.

Key words**:** *risk management, SMEs, agriculture, climate change, farms*

INTRODUCTION

Small and medium-sized enterprises (SMEs) are an essential component of all economies since they are the primary generators of new products and services, social cohesion, and employment [10, 12]. SMEs in the agricultural sector also substantially contribute to economic change in developing nations by addressing a wide array of unemployment, nutrition, income poverty and food security issues. Despite their vital role and contribution to economic development, they have received significant criticism for their poor performance regarding financial risk management [18]. Due to climate change, agricultural hazards associated with weather events, soil conditions, diseases and pests have increased in recent years. These hazards have imposed a financial shock on farmers [19]. Considering this circumstance, entrepreneurs should implement strategies to reduce the risks associated with climate change and maintain agricultural productivity and farm profitability [28].

Taking calculated risks is one of the most important things a company can do to ensure its long-term resilience [35]. Managing risk is a crucial aspect of farming, and EU policy makers include this as one of the main agricultural public policy goals. Risk management should be analyzed as a system in which multiple components interact. These components are organized along three axes: risk sources, farm owners' strategies and government policies. Several crucial issues and ideas must be discussed from all three axes to better comprehend these interactions [23]. Price or market risk (output and input price fluctuations, market shocks), financial risk (loans and credits), production risk (weather-related risk, pests and diseases (biosecurity threats), technology change, (yields), institutional risk (regulations, legal,

environment, and tax policy) and human resource risk (physical and mental health) have previously been identified as main sources of risks associated to agricultural business [8]. Nonetheless, numerous empirical studies have disclosed the existence of obstacles impeding the performance of Agri-SMEs and resulting in a low growth rate. These challenges include, but are not limited to: access to finance and a low level of financial inclusion; increased competition; low capacity to deal with new technology; lack of data management; higher transaction costs relative to their size; a lack of entrepreneurial abilities; insufficient business management skills and nevertheless ineffective financial management [10]. Governments have frequently compensated farmers for losses, but there is now a growing demand for farmers to find private-market alternatives [21]. The risk management strategies adopted by farm administrators reflect their risk perceptions [20], specifically, how they evaluate the enterprise's situation and opportunities [29]. In addition, it is evident that when a business operates in an uncertain environment, it must have adequate risk management capabilities [33]. Enterprise risk management (ERM) is a methodology that takes a strategic view of risk management from the point of view of the entire business or organization. It is a top-down business strategy that seeks to identify, assess and prepare for potential losses, dangers, hazards, and other potential risks that may impede an organization's operations and objectives and/or result in losses [6]. Due to the economic downturn, implementing risk management techniques in SMEs is quite a challenging task [17].

Is a fact that the more efficiently Agri-SMEs operate, the more they stimulate economic activities that contribute to the prosperity and development of nations [34]. Risk management should begin at the farm level, where producers should employ multiple strategies to stabilize their incomes. This can be achieved by diversifying production to generate income from multiple activities. In crop farms, the use of various crops, or in livestock farms, the growth of several types/species of animals, or the development of non-agricultural sources of income such as agrotourism, can offset a portion of the losses caused by agricultural activity. In addition to these practices, the farmers can use a variety of risk management techniques that are either privately owned (insurance, mutual funds, and forward/futures contracts that are not subsidized) or publicly available (direct payments, government-guaranteed prices, and other forms of government assistance) [11].

This study aims to evaluate the understanding of risk management in the Romanian agriculture industry, specifically focusing on small and medium-sized businesses. Several keywords and concepts have been established to facilitate the identification of research papers related to enterprise-level risk management strategies in agriculture.

The objective of this study is to assess the risks faced by small and medium-sized firms operating in the agricultural sector of Romania, as well as to examine the strategies employed for their management. To achieve such an objective, several research questions were established:

1. This study aims to investigate the existing knowledge related to the risks faced by Romanian agricultural SMEs, the strategies employed to manage these risks, and the fundamental conceptual frameworks and research areas related to risk management.
2. Secondly the study aims to determine any advantages and disadvantages of risk management strategies implemented by the Romanian agricultural SMEs.

MATERIALS AND METHODS

A comprehensive assessment of the literature was conducted and successfully executed following the guidelines recommended by PRISMA 2020. Prisma 2020 is a handbook that replaces Prisma 2009 and includes revised reporting guidance for systematic reviews that reflect progress in methodologies for identifying, selecting, evaluating, and synthesizing papers, as described by Page et al [26]. A compilation of pertinent publications on risk management in SMEs within the Romanian agriculture sector was conducted

using Science Direct, the widely-used literature-searching database provided by Elsevier.

The retrieval of database results was achieved by combining distinct sets of keywords (Table 1). To restrict the outcomes, a selection technique was implemented, employing the following filters: exclusively incorporating research and review articles while eliminating all other forms, and exclusively considering papers within the subject field of agricultural and biological sciences. No articles were found in languages other than English, rendering language-based filters unnecessary.

Other studies on risk management in SMEs followed the same PRISMA guidelines are: Small and medium enterprises (SMEs) in a pandemic: A systematic review of pandemic risk impacts, coping strategies and resilience written by Michael Odei Erdiaw-Kwasie et al. [9]. and SMEs in Covid-19 Crisis and Combating Strategies: A Systematic Literature Review (SLR) and A Case from Emerging Economy written by Mohammad Hossain et al. [16].

Table 1. Keywords and applied filters associated with the database.

Keywords	Article type	The field of research	Access type	Results
Risk management in farms AND Romania	review article research article	Agricultural and Biological Sciences	Open access & open archive	164
Agricultural farms risk management AND Romania	review article research article	Agricultural and Biological Sciences	Open access & open archive	142
RM in Romanian farms	review article research article	Agricultural and Biological Sciences	Open access & open archive	7
Risk management in agricultural SMEs AND Romania	review article research article	Agricultural and Biological Sciences	Open access & open archive	3
Agricultural small and medium sized enterprises risk management AND Romania	review article research article	Agricultural and Biological Sciences	Open access & open archive	8
RM in agricultural SME's and Romania	review article research article	Agricultural and Biological Sciences	-	1

Source: Own establishment of search criteria and filters.

The outcomes were integrated into a unified Excel database, and redundant articles were eliminated from the results.

The preliminary investigation yielded 325 entries from the database.

-A total of 157 duplicate records were eliminated, with 61 of them being automatically removed using the "remove duplicates" tool in Excel, while the remaining 96 were manually removed.

-A total of 168 records were subjected to screening, of which 37 were eliminated based on an assessment of the title. These exclusions were made as it was evident from the title that the subject was not related to Romanian agricultural SMEs risk management. Additionally, the abstracts of these records were also reviewed to confirm their lack of relevance.

-A total of 63 complete papers were evaluated. After a thorough examination of the complete articles, it was determined that 47 articles were not relevant to the research subject. In the final review, a total of 16 studies were included in the assessment.

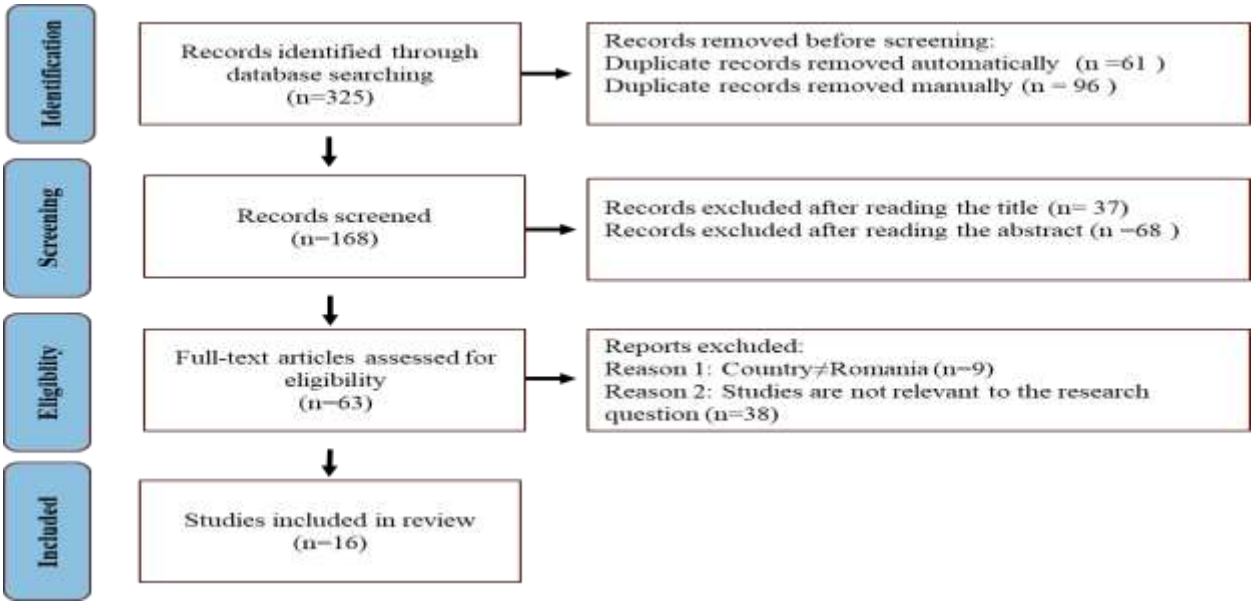

Fig. 1. The PRISMA flow chart methodology used in the study
Source: Author's own creation.

RESULTS AND DISCUSSIONS

The existing literature assessment indicates that there is a scarcity of research on risk management in agricultural SMEs in Romania. Currently, there exist only a small number of studies broadly addressing this topic.

The current investigation has successfully identified the primary categories of risks encountered by small and medium-sized agricultural enterprises in Romania, including social risks, economic risks, environmental risks, market risks, production risks, operational risks, policy risks, technological risks, labor risks, knowledge risks, demographic risks and resource risks (Table 2).

Furthermore, the current study has also identified some risk management methods that have the potential to mitigate the issues encountered by Romanian agricultural SMEs. The recommended strategies presume to access public EU subsidies, recruit young and highly skilled workers, offer home delivery services, employ chemical substances, engage in risk sharing and risk transfer mechanisms, implement crop rotation methods, invest in cutting-edge technologies, and diversify their business operations (Table 2).

Additionally, this inquiry seeks to provide illustrations of the way internal and external factors can exert influence on the capacity of agricultural SMEs to proficiently address risk-developing threats.

Internal factors:

1. Limited financial, personnel, and technical resources pose challenges for SMEs in successfully identifying, assessing, and responding to new hazards. The SMEs may encounter financial constraints that hinder their ability to allocate resources towards the acquisition of risk management software or the recruitment of specialized risk management personnel.

2. Resistance to change: SMEs may exhibit resistance to change, leading to a slow recognition and response to developing hazards. This resistance might stem from a deeply ingrained belief in maintaining traditional practices without considering other approaches. This phenomenon may lead to a diminished capacity for adaptability and prompt decision-making, hence impeding the effectiveness of risk mitigation endeavors.

3. Fragmented approach to Risk Management: SMEs frequently possess constrained risk management capabilities, where in numerous functions about risk management exhibit redundancy or operate in isolation. This fragmented arrangement poses challenges in obtaining a holistic understanding of emerging risks and implementing appropriate responses.

External factors:

1. The proliferation of technology: The emergence of novel technologies, such as automation, might potentially engender new vulnerabilities for small and medium-sized enterprises, with limited access to the necessary resources to acquire technical proficiency in effectively mitigating these risks.

2. Regulations have the potential to undergo rapid and frequent changes. Small and medium-sized enterprises (SMEs) may possess restricted expertise or resources that hinder their ability to effectively adapt to regulatory changes.

3.SMEs frequently face ***susceptibility to market dynamics*** and economic circumstances, such as trade ambiguities or variations in currency values. These factors can exert a substantial influence on their level of risk exposure and their capacity to proficiently handle risk management.

The absence of comprehensive research on risk management in the agricultural sector of Romania, specifically focusing on small and medium-sized firms, excludes the ability to generalize or present a comprehensive picture of their present circumstances. To develop a comprehensive understanding of the present circumstances, it is imperative to undertake further investigation. The present study provides a comprehensive examination of the existing literature on the subject, so establishing a solid basis for subsequent investigations in this field.

Table 2. Studies which reviewed the academic literature on risk management at the level of small and medium-sized enterprises in the agricultural field in Romania

Authors (Year)	Identified risks	Identified risk management strategies
Guarín et al., (2020)[15]	1. Economic vulnerability: even the most successful farm types had a monthly income of approximately 2000 EUR per household, raising concerns about long-term viability and ability to handle unforeseen shocks. 2. Limited access to financial services and training: poorer farm types faced challenges accessing financial services and training, hindering their ability to assume credit risks and invest in labor and innovation. 3. Scarcity of labor: economically disadvantaged peasant farms relied more on hired labor than family labor during critical activities, indicating a scarcity of labor. 4. Difficulty accessing large retail markets: small farms often preferred direct sales to consumers and farmer's markets, as larger retailers favored larger suppliers due to lower costs and predictability. 5. Succession issues: lack of new entrants into farming, reflecting the well-known problem of succession in European small farming, which leads to the underutilization of small farms' potential.	1. Crop insurance: farmers can purchase crop insurance to mitigate the financial impact of crop losses caused by various risks. 2. Diversification: many Romanian farmers practice diversification by growing different crops and raising various livestock. 3. Cooperatives: farmers can form cooperatives to pool resources, share risks, and improve bargaining power. 4. Government support: the Romanian government offers subsidies and financial assistance to farmers.
Agarwal et al., (2021)[1]	1. Aging membership and conflicts among members leading to inactivity of group farms 2. Economic challenges posed by drought and related factors leading to inability of large cooperative associations to survive. 3. Out-migration of youth from rural areas in search of non-farm jobs, resulting in the ability of groups to regenerate inter-generationally 4. Decline in crop cultivation by groups, while livestock breeding remains a sustainable activity for cooperation.	1. Continuously attracting and involving younger people who are willing to take over the farms, modernize them, and ensure their continuity. 2. Diversification of income streams and adoption of climate-adaptive practices to mitigate the impact of drought and other economic challenges. 3. Fostering an attractive environment for young farmers by providing support, incentives, and opportunities in agriculture. 4. Focus on livestock breeding for milk and meat, which requires significant labor and coordination, to sustain and attract farmers for group farming.
Meuwissen et al., (2021)[22]	1. Lower sales of products, specifically lambs for Easter and fresh early spring vegetables. 2. Lower sales in peasant markets due to lack of customers' mobility. 3. Lower sales due to abandoned school programs, such as bread, milk, and apples. 4. Interrupted deliveries of products to restaurants. 5. Lower mobility of commuting workers. 6. Reduced off-farm income if family members lost off-farm jobs. 7. Collapse of agritourism due to cancellations, especially during peak periods like Easter and 1st of May holidays	1. Coping for Agritourism: owners who faced the closing of agritourism activities occasionally began meal deliveries. 2. Coping for Processors: processors reduced buying of milk from farmers due to reduced demand. 3. Compulsory Protection measures for Peasant Markets and Retailers: Established measures to protect sellers and customers. 4. Coping for Government: launched a platform for online sales of vegetables; extended the period for direct payment applications; increased state aid; re-allocated funds from rural development programs; introduced payments for "technical unemployment" for enterprises forced to close or scale down until June 1 (75% of salary paid by the state). 5. Coping for Banks: increased finance opportunities

		for working capital or investments (available for all small and medium-sized enterprises), with 90% guaranteed by the state; postponed credit installments by up to 9 months.
Spiegel et al., (2021)[31]	The potential bias and limitations in perception-based resilience assessments. This means that farmers' perceptions of their resilience capacities may not accurately reflect the actual resilience of their farming systems. The assessments could be influenced by various biases or limitations, such as subjective interpretations, cognitive biases, or limited predictive abilities. As a result, decision-makers and policymakers may rely on inaccurate or biased perceptions when developing interventions or making policy decisions, which can lead to ineffective or suboptimal outcomes.	N/A
Biddoccu et al., (2020)[4]	1. Inadequate erosion rates: The comparison across different wine-growing regions indicates that some soil management practices, such as ACC and TCC, fail to achieve sustainable erosion rates. This suggests a risk of increased soil erosion in these areas if these management practices continue. 2. Soil moisture subfactor: Incorporating the soil moisture subfactor (Sm) into the calibration provides the best soil loss predictions. However, it also highlights the need to carefully consider competition for soil water, especially in drier areas, when implementing certain soil management practices. 3. Differences in predicted erosion rates: The article emphasizes the need to consider differences in climate, topography, soil variability, and the impact of management on ground cover when predicting erosion rates. This suggests that these factors can contribute to variations in erosion rates and may pose a risk if not properly accounted for. 4. Variability of the C factor: The C factor, representing soil cover and management, exhibits significant variability due to its coupling with local climate and specific management practices. This introduces a risk of bias in large-scale studies when extrapolating RUSLE parameters and implies the need for careful consideration of local conditions when using C values. 5. Farm-to-farm variability: The article mentions the importance of considering farm-to-farm variability in C values within the same soil management type, even within the same area. This indicates that different vineyards within a region may have varying erosion risks, necessitating a more nuanced approach to erosion prediction. 6. Erosion: To address the uncertainty of erosion predictions and the statistical significance of differences among areas and vineyard management, the usiage of the probabilistic approach to the distribution of the C factor. This could provide more reliable data and potentially mitigate risks associated with erosion predictions.	N/A
Soriano et al. (2023)[30]	1. Economic long-term pressures: participants in the farming system's focus group in RO-Mixed identified the lack of markets as one of the most important challenges. This suggests a risk of economic instability in the agricultural sector in Romania, particularly related to market uncertainties and low profitability and prices. 2. Environmental shocks: although not explicitly mentioned about Romania, environmental shocks were identified in 7 out of 10 FS' focus groups. This indicates a potential risk of environmental challenges, such as droughts, that could impact the agricultural sector in Romania. 3. Social long-term pressures: the decline in consumer demand for meat was identified as a challenge in the FS' focus group in SE-Poultry. While not directly related to Romania, it suggests a potential risk of changing consumer preferences and demand patterns, which could impact the livestock sector in Romania.	N/A
Rivera-Ferre et al., (2021)[27]	1. Disruptions to the food supply chain due to COVID-19; 2. Interruptions to food trade and distribution; 3. Significant increases in food loss and waste, especially of perishable products; 4. Farmer's high level of exposure and dependence on other actors in the food chain; 5. Reduction in labor force and lack of seasonal workers due to mobility barriers; 6. Impacts on globalized food systems heavily dependent on migrant seasonal workforce; 7. Interruptions and disruptions in food chains resulting in unsold agricultural products; 9. Rapid and unprecedented changes in food habits and consumption patterns.	N/A
Iuliana Dobre and	Risks: 1. Negative impacts on people's health and the environment due to the	N/A

Elena Soare (2015)[7]	use of chemicals in agriculture; 2. Generation of waste and packaging that create issues for people and the environment; 3. Higher costs for producers associated with the use of chemicals; 4. Lack of knowledge about the proper use and allocation of chemicals, affecting resource allocation and economic activities. 6. Information gaps hindering environmental improvements and best management practices in agriculture.	
Paas et al., (2021)[25]	1. Critical thresholds for system function indicators, such as yield per hectare and economic viability, are perceived to be close or beyond in some farming systems. This indicates that the systems are at risk of not meeting the desired levels of food production, economic viability, and natural resources. 2. Variability of markets and climate could lead to a drop in value below the indicated thresholds, which would pose a risk to the system's performance. 3. Some indicator levels in low-performing systems are perceived to be at or beyond the threshold, indicating a need for immediate action in terms of product prices and labor availability. 4. Reaching critical thresholds for soil quality is a concern in some farming systems, requiring continuous adaptation to prevent further degradation. 5. Externally determined thresholds for water quality and greenhouse gas emissions in the BE-Dairy system are perceived to be beyond acceptable levels, leading to disagreement among farmers. 6. Critical thresholds for economic viability differ from farm to farm in some case studies, which may result in the disappearance of economically less competitive farms from the farming system. 7. Interacting thresholds across level and domain were observed, indicating that exceeding critical thresholds in one area can have cascading effects on other areas within the farming system. 8. Decline in performance of system's main function indicators, such as food production, economic viability, and natural resources, is expected when critical thresholds are exceeded. 9. Decline in resilience attributes, such as profitability, support of rural life, and self-organization, is also expected when critical thresholds are exceeded.	N/A
Toma et al.,, (2021)[32]	1. Over-complexity and lack of farm advisory support - The pilot agri-environment-climate measure introduced in Romania in 2014-2020 failed due to its over-complexity and lack of farm advisory support, despite being a fundamentally important measure for supporting the continued contribution of small farms to FNS. 2. Lack of support for small farmers - The comprehensive policy analysis on CAP and small farms conducted by Davidova et al. (2013) found that the recommendations for supporting small farms have not been sufficiently addressed during the 2014-2020 CAP programming period to prevent the decline of small farms. This threatens the continued contribution of CEE small farmers to FNS. 3. Land consolidation - The trend of land consolidation affecting otherwise fragmented CEE countries is natural and likely to continue, which can threaten the viability of small farms and their unique social and environmental assets that contribute to regional food systems.	N/A
Bertolozzi-Caredio et al., (2021)[3]	1. Lack of knowledge and expertise in RM tools and strategies, especially for smaller and less diversified farms. 2. Limited availability and accessibility of financial and policy instruments tailored to farmers' specific needs. 3. Inadequate cooperation and coordination between actors in the value chain, affecting the implementation of effective RM strategies. 4. Insufficient public awareness and societal understanding of the functions and values of farming, especially related to livestock systems and mixed farms. 5. Inflexibility of farms to change, leading to challenges in adapting to changing farming conditions and implementing effective RM strategies. 6. Dependence on CAP aid, which influences farm business and decision-making, and poses a challenge in designing effective RM strategies to promote long-term sustainability.	1. On-farm risk management strategies: learning processes, knowledge exchange, and information and data access to promote risk understanding and effective decision making. 2. Risk-sharing strategies: horizontal cooperation between farmers, vertical cooperation between farmers, supply chain actors, and other cooperatives. 3. Risk transfer strategies: financial and policy instruments like insurance, credit, futures, and policy aids to mitigate risk exposure and share risk. 4. Extension services and provision of training programs to farmers and other value chain actors. 5. Integration of different insurance types to cope with multiple shocks and long-term threats. 6. Creation of financial consultancy services to support farmers in business planning and use of risk management tools and strategies. 7. Development of public and private collaboration schemes to increase accessibility and use of financial and policy instruments. 8. More decentralized, locally-based and bottom-up approaches to cope with regional-specific issues.
Arnalte-Mur		N/A

et al., (2020) [2]	1. Limited access to technology and knowledge on farm management - small farms may face constraints in accessing the necessary resources, information, and knowledge to adopt on-farm productive and managerial changes. This can hinder their ability to respond and adapt to future challenges. 2. Lack of awareness and recognition from consumers - the role of small farms in regional food systems can be heavily influenced by consumers' values and habits. If consumers are not aware of the health and environmental implications of their diets or do not recognize the importance of small-scale and local farming, it can impact the demand and market opportunities for small farms. 3. Insufficient public budget and expenditure - the capacity and willingness of the state to allocate public resources towards small farmers' needs can significantly affect their ability to thrive. This includes financial support programs and targeted investments in public infrastructures that can support small farms. 4. Limited integration into non-conventional value chains - small farms' integration into food systems through alternative market channels, such as short food supply chains (direct selling	
Ortiz-Miranda et al., (2022)[24]	1. Decline in the number of small farms. 2. Difficulties in responding to market demands. 3. Lack of societal awareness of regional small farms. 4. Low public support for small farms. 5. Financial constraints hindering research and development for small farms. 6. Lack of investment in small farms. 7. Impact of climate change on agricultural production.	1. Collective action and cooperation. 2. Increased public expenditure in favor of small farms. 3. Access to technology and knowledge. 4. Differentiation of produce through quality. 5. Search for urban niche markets. 6. Specialization in agro-tourism. 7. Revival of short food supply chains and local trade.
Karolina Furtak and Agnieszka Wolińska (2023)[14]	1. Complexity of the soil environment and difficulty in understanding the interdependencies and impacts of different factors on the ecosystem. 2. Difficulty in determining the distribution of water in the soil and assessing microbial activity and biogeochemical processes. 3. Technical difficulties in analyzing dry soil due to low concentrations of certain compounds and distinguishing between viable microbial biomass and inactive forms. 4. Incomplete research focusing on individual elements rather than complex relationships in the soil environment. 5. Lack of collaboration between different specialists in studying soil ecosystems in stress conditions. 6. Climate change and extreme weather events posing challenges to agriculture and the economy. 7. Uncertainty regarding the development of effective biopreparations and transgenic drought-tolerant plants.	N/A
Dumitru-Florin Frone and Simona Frone (2015)[13]	1. Lack of investment in water infrastructure and irrigation systems in the rural areas of Romania may lead to water scarcity, affecting the sustainable development of the agri-food sector and rural areas. The dependency on weather conditions for agricultural production may cause non-performance in annual agricultural production. The vulnerability of agriculture to climate change may also significantly limit food production. 2. Poor water supply and sanitation systems in rural areas may cause environmental pollution, affecting soil and water resources, and negatively impacting human health. The low access of the rural population to these public infrastructure services may contribute to severe rural poverty areas. 3. Lack of water security may create significant barriers to growth in Romania, particularly in the agriculture and food sector, which can affect the country's food security. 4. The increasing pollution of water resources, over-abstraction of groundwater, and the significant issues created by climate change may lead to severe water shortages in the future, impacting the sustainable economic growth and fighting poverty in the country.	N/A
Chen et al., (2022)[5]	1. High usage of herbicides, insecticides, and synthetic fungicides has potential negative impacts on the environment and public health. 3. Attitudes and beliefs of winegrowers focused on quantity-oriented production rather than quality-oriented production. 4. Lack of implementation of agri-environmental schemes to support pesticide reduction and vegetation cover in Romanian viticulture.	Adapting inter-row management and pesticide use in response to changing weather patterns, and investing in research on how climate change may affect viticultural landscapes.

Source: The author's own structuring of the results identified through the prism of the search.

The agriculture industry holds considerable importance within the Romanian economy, with small and medium-sized firms (SMEs) serving as a vital constituent. Nevertheless, due to the susceptibility of the agricultural sector to various hazards, the implementation of efficient risk management strategies becomes imperative for SMEs operating in the agricultural industry in Romania. The objective of this study was to conduct a comprehensive examination of the primary concerns related to risk management within SMEs operating in the agricultural sector in Romania. Furthermore, the research aimed to identify potential barriers that could hinder the successful application of efficient risk management strategies. The systematic review yielded numerous significant findings. The findings of the studies indicate a notable deficiency in the level of awareness among SMEs on the necessity of implementing risk management strategies. SMEs in the agriculture sector have historically demonstrated a lack of awareness regarding the extent of risks present in their industry. Consequently, they have neglected to acknowledge the importance of implementing risk management strategies to mitigate the potential severity of these risks. Furthermore, a significant number of SMEs had constraints in terms of resources, leading to a lack of proficiency in the field of risk management. Consequently, this posed difficulties in effectively addressing and controlling risks promptly. Insufficient knowledge and skills within the industry may result in suboptimal or insufficient risk management strategies among SMEs. In addition, the assessment underscored the significance of enhanced governmental assistance and cooperation in fostering customized and efficient risk management approaches. Effective risk management practices require collaborative efforts among researchers, policymakers, and SMEs to establish policies and strategies aimed at their development and implementation. The presence of predominantly qualitative research in the study may pose a constraint on the extent to which the findings can be generalized. Moreover, the research papers predominantly concentrated on risk perceptions rather than delving into risk management measures.

The study's results suggest that it would be beneficial for policymakers and stakeholders in the agriculture industry in Romania to actively promote and provide assistance in the development of enhanced risk management policies, strategies, and practices that are specifically designed to address the distinct requirements of SMEs. To enhance the preparation and resilience of SMEs, it was imperative to offer pertinent resources and support to enhance their understanding and proficiency in risk management. Notwithstanding these constraints, the present study offers significant contributions by shedding light on the difficulties encountered by SMEs operating in the agricultural sector in Romania. Moreover, it suggests areas that necessitate additional investigation to enhance comprehension and advocate for the implementation of proficient risk management strategies.

Implications

There are several implications of the literature assessment for policy and practice pertaining to risk management among SMEs in the agricultural sector in Romania. The primary purpose of the evaluation is to provide policymakers with an understanding of the existing risk management procedures inside SMEs. Additionally, it aims to identify any deficiencies in knowledge and draw attention to specific areas that want further consideration. This information can be utilized by policymakers to formulate pertinent and efficacious policies aimed at enhancing risk management methods within the agricultural industry. Moreover, this research emphasizes the necessity of enhanced cooperation among stakeholders and the implementation of a customized risk management strategy within the agriculture industry. Policymakers have the opportunity to collaborate with researchers and SMEs to customize policies and strategies that will facilitate the advancement and adoption of efficient risk management techniques within the agricultural sector.

Also, this analysis serves as a valuable source of information for farmers, small company

owners and management personnel of small and medium-sized enterprises (SMEs) operating within the agriculture sector, elucidating the significance of implementing effective risk management strategies. The review can enhance awareness regarding contemporary risk management approaches, as well as the legal and regulatory obligations associated with risk management and the potential dangers particular to various industries. The heightened level of consciousness can facilitate SMEs in comprehending the significance of risk management and motivate them to embrace more effective risk management methodologies.

Ultimately, this study serves as a foundation for future research endeavors concerning risk management approaches, with the potential to enhance the performance, productivity, and profitability of SMEs operating within the agricultural sector. The evaluation has indicated prospective avenues for further research, which encompass exploring the influence of various risk factors on the performance of SMEs, as well as assessing the efficacy of distinct risk management strategies in mitigating different types of hazards. Furthermore, it is imperative to investigate the various determinants that impact the successful execution of risk management strategies. Additionally, conducting scholarly inquiries into the optimal methods for SMEs to actively participate and cooperate with other pertinent stakeholders in the realm of risk management, such as government agencies, insurance firms and financial institutions, is of utmost importance.

Overall, this systematic review has significant implications for policy and practice related to risk management among SMEs in the agricultural sector in Romania. Policymakers, researchers, and stakeholders can use these findings to identify the critical barriers to effective risk management implementation and develop strategies to overcome those barriers.

In summary, this systematic research holds substantial implications for policy and practice concerning risk management within SMEs operating in the agricultural sector in Romania. These findings can be utilized by policymakers, researchers, and stakeholders to identify the key obstacles in implementing risk management effectively and to formulate strategies for overcoming these obstacles.

CONCLUSIONS

The agricultural industry in Romania holds considerable significance as a contributor to the nation's economy, with SMEs playing a pivotal role in fostering its growth and ensuring long-term viability. Nevertheless, the agricultural industry possesses inherent risks that are beyond the control of SMEs, including climate change, catastrophic weather occurrences, and market price volatility, among other reasons. Therefore, the implementation of risk management strategies is of utmost importance SMEs that are engaged in the agricultural sector in Romania. This is necessary to effectively minimize potential risks and ensure the continuity of their business activities. The implementation of effective risk management strategies can assist SMEs in the identification of possible risks and hazards, as well as in the development of plans to address and mitigate crises. Consequently, these practices can contribute to a reduction in the probability and magnitude of losses experienced by SMEs.

Furthermore, the implementation of efficient risk management methods can confer a competitive edge on SMEs through the augmentation of their standing and the fortification of their associations with key stakeholders, including customers, suppliers, and financiers. SMEs operating within the agricultural sector encounter a multitude of obstacles when it comes to the adoption and implementation of efficient risk management strategies. The absence of sufficient resources and knowledge might impede their capacity to discern and handle hazards, whilst a lack of interaction with policymakers can restrict their access to pertinent support systems and resources.

Hence, policymakers must assist SMEs operating in the agriculture industry in Romania, intending to facilitate the adoption of efficient risk management strategies. This

form of assistance can encompass various incentives, such as grants or subsidies for training and risk management software, which have the potential to augment the ability of SMEs to proficiently handle hazards. Policymakers have the potential to collaborate with SMEs to recognize and tackle obstacles that hinder the achievement of efficient risk management. These barriers may include the need to comply with regulatory requirements, difficulties in accessing markets, and challenges related to supply chain operations.

To facilitate the development of effective risk management strategies, a comprehensive approach to risk management is needed that includes the involvement of SMEs in policy development and implementation. This approach would encourage information and resource sharing between SMEs and relevant stakeholders, promote collaboration and knowledge exchange between SMEs, and create a supportive environment for SMEs to learn and adopt best practices. Finally, further empirical research into the factors that influence the effectiveness of risk management in SMEs in Romania is needed to better understand the unique challenges and opportunities facing these businesses and to develop evidence-based strategies for improving risk management practices in the agricultural sector.

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