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Róbert Tóth (Hungary), **Richárd Kása** (Hungary), **Vitéz Nagy** (Hungary), **Csaba Lentner** (Hungary)

THE IMPACT OF FINANCIAL CULTURE THE FINANCING OF SMES IN HUNGARY

Abstract

The financial literacy and culture of small and medium-sized enterprises (SMEs) significantly influence their financial stability, decision-making processes, and long-term sustainability. This study analyzes the relationship between financial literacy, company size, and their impact on access to financing and loan repayment performance among Hungarian SMEs from 2019 to 2023, an emerging market economy characterized by continuous economic challenges. Using a partial linear regression model and mediation analysis on a representative dataset of approximately 2,500 SMEs evenly distributed across size categories over five years, the study finds that financial management has a statistically significant effect on access to funding ($\beta = 0.217$, $p < 0.001$ in 2023). Financial planning also plays a crucial role in financial decisions, with a positive correlation strengthening over time ($\beta = 0.181$, $p < 0.001$). The mediating role of company size is confirmed across all models, with Sobel test results indicating a significant indirect effect ($z = 5.093$, $p < 0.001$ for financial management impact on funding access). By 2023, medium and larger SMEs demonstrated improved financial decision-making and increased financing opportunities, whereas smaller enterprises continued to struggle, emphasizing the need to enhance their financial strategies. The findings highlight the importance of financial literacy development to ensure SME sustainability, improve access to external financial resources, and support broader economic growth.

Keywords financial literacy, loan repayment, corporate culture, financial planning, risk management

JEL Classification G32, O11

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Róbert Tóth, Senior Lecturer, Guest Researcher, Ph.D. in Management, Faculty of Health Sciences and Social Studies, Faculty of Governmental and International Studies, Institute of Economics and Management Studies, Széll Kálmán Public Finance Lab, Károli Gáspár University of the Reformed Church in Hungary, Ludovika University of Public Service, Hungary.

Richárd Kása, Senior Researcher, Ph.D., Habilitation in Management, Faculty of Finance and Accountancy, Department of Management and Entrepreneurship, Budapest Business University, Hungary.

Vitéz Nagy, Ph.D., Associate Professor, Department of Infocommunication, Corvinus University of Budapest; Visiting Researcher, Ludovika University of Public Service, Széll Kálmán Public Finance Lab, Hungary.

Csaba Lentner, Dr., Professor, Head of Lab, CSC, Habil. in Public Finance, Szell Kalman Public Finance Lab, Faculty of Public Governance and International Studies, Ludovika University of Public Service, Hungary. (Corresponding author)

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INTRODUCTION

The financial literacy and culture of small and medium-sized enterprises (SMEs) are pivotal in shaping their resilience and adaptability, particularly in dynamic economic environments. SMEs play a crucial role in national economies, contributing to employment, innovation, and GDP growth. According to Eurostat (2022), SMEs accounted for approximately 99% of all enterprises in the European Union, employing around 100 million people and generating over half of the total business value added. Similarly, in Hungary, SMEs constitute 99.8% of all enterprises, employing 67% of the workforce and contributing nearly 50% to the national GDP (Hungarian Central Statistical Office, 2023). However, their long-term sustainability often hinges on the adequacy of their financial management practices and their ability to navigate financial challenges. This issue becomes even more pressing in emerging market economies, where access to financial resources is frequently constrained, and external shocks have amplified consequences. A recent study by Tóth et al. (2022) highlights that financial literacy significantly impacts SMEs' ability to secure financing, with financially literate firms being 30% more likely to obtain bank loans under favorable conditions compared to their less financially knowledgeable counterparts.

The period between 2019 and 2023 presented unique challenges for Hungarian SMEs, including the COVID-19 pandemic, inflationary pressures, and energy crises. These disruptions highlighted significant disparities in the financial preparedness and adaptability of businesses, particularly in relation to their size. While larger SMEs often possess structured financial processes that enable them to mitigate risks and secure funding more effectively, smaller enterprises typically lack these capabilities, making them more vulnerable to external shocks. According to the World Bank (2021), SMEs in emerging economies faced an average revenue decline of 20-50% during the pandemic, emphasizing the need for robust financial planning and crisis management.

The scientific problem addressed in this study is rooted in understanding how financial literacy and corporate financial culture influence SMEs' ability to access funding and manage financial obligations during periods of economic instability. Identifying the factors that enhance or hinder financial performance is critical not only for the survival of individual businesses but also for the stability of the broader economic ecosystem. Exploring this relationship provides insights into how SMEs can strengthen their financial practices to ensure sustainability and contribute more effectively to economic growth, even under adverse conditions.

1. LITERATURE REVIEW AND HYPOTHESES

The literature on financial literacy and corporate financial culture highlights their critical role in shaping the resilience and adaptability of businesses, particularly SMEs, during periods of economic uncertainty. Prior studies have emphasized the importance of financial awareness, strategic planning, and informed decision-making in mitigating risks and enhancing access to funding. This section explores the existing body of knowledge on these themes, focusing on the relationship between financial management practices and company performance, as well as the external factors influencing SMEs' financial sustainability in dynamic market environments.

The most recent period (2019–2023) clearly demonstrates that without planning, it is very difficult for businesses to react consciously and effectively to macroeconomic events and series of events. In the planning phase, it is important that businesses do not have a single playbook but prepare for the future with different strategies for future outcomes. Moreover, after 2020, these plans were more reasonable to draft with a rolling approach (rolling financial planning), as at that time, a series of crises hit companies: the COVID-19 pandemic, disruption of supply chains, weakened supply and demand, inflation, increased interest rate environment (more expensive financing), and the energy crisis. Over the years, these have built on each other, forcing business leaders to plan for the next fiscal year in worsening circumstances. This has not been an easy task, but planning as an element of the financial management toolkit has become much more valuable (Afzali, 2023). It is also worth remembering the risk management and risk mitigation benefits of planning (Ferreira de Araújo Lima et al., 2020). Planning is necessary at different stages of a business's life, before investment, in the event of innovation challenges, changes in financing policy, changes in capital structure, or even in the case of a restructuring of the production and sales portfolio. The application of an appropriate financial strategy plays a decisive role in the life cycle of a business and crucial issues of survival and development (Akbar et al., 2021).

In terms of market access to finance for the SME sector in Hungary, there has been a significant rise in lending rates over the past 3 years, which was, in fact, a good response by the Central Bank of Hungary to the disinflationary stance of the country's central bank, in line with the policy stance of major international central banks. In line with international trends, the launch of the cycle of base rate hikes by the Hungarian Central Bank (MNB) (from 0.6% on 22 July 2020 to its highest rate within the analysis period, a peak of 13% on 28 September 2022, and its maintenance until 25 October 2023) was of course inevitable due to the continued deterioration in the inflation forecast. At the same time, in the double-digit real interest environment, both the government and the Hungarian National Bank (MNB) have contrib-

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uted by utilizing a specialized innovation toolkit. A key of this approach is the significant enhancement of financial literacy (Csiszárik-Kocsir et al., 2021). The Hungarian government has been actively involved in stabilizing the credit market and restarting SME lending through the state-subsidized Széchenyi Card Programme.

Research projects in recent years have indicated that the level of financial awareness and level of financial literacy of SMEs in Hungary have played an increasingly important role in the SMEs' willingness to borrow from banks. The experience of the last five years shows that more financially literate enterprises have obtained bank loans easier, faster, and with more favorable terms on collateral than those without adequate financial literacy, in line with international trends (see Sthembiso Msomi & Nzama, 2022; Tóth et al., 2022a; Tóth et al., 2022b; Toth et al., 2023). In this study, the elements of financial literacy include budgeting, cash flow management, the identification of financial risks, and strategic financial planning, all of which contribute to increased creditworthiness of businesses.

Crises and a changing economic environment force businesses to work on continuous planning, fact dataset comparison, analysis, and, as a result, effective response. The continuous updating of plans (rolling financial planning) imposes an additional burden and task on the business, but in contrast, the capacity to react consciously and quickly to adapt more effectively is also financially rewarding for the business. Crises and epidemics have a self-evident impact on the profitability, sustainability, and value of businesses, but businesses with a conscious and prepared strategy and plans can respond more flexibly to challenges (Bose et al., 2022). The development of a financial and management information system that is conscious and tailored to the needs of the business also plays a role in sustainable and evolving operations and innovation (Huang et al., 2021). In addition to providing information for crisis management, a timely topic is to ensure conscious and sustainable management and the resulting disclosure of accounting information (Comoli et al., 2023).

To choose the right financial decisions in times of crisis, it should be important to have economic decision support mechanisms based on a holistic financial approach. Controlling, as a fundamental element of corporate financial culture (see the structure of the financial culture index compiled in accordance with previous research (Mallinguh et al., 2022; Toth et al., 2023), plays a crucial role in this since one of its objectives is to provide timely, sufficient quantity and quality of information for planning, analysis and control processes. The control processes and the accounting information system that supports them must ensure the preparation of processes and documentation for financial decisions, the efficiency and economic soundness of the decisions taken, the control of the accounting of economic events, and prior and follow-up management control (Jovanovic, 2012). Responding to a rapidly changing market environment is a challenge for businesses that require immediate access to qualitative and quantitative information. This has been apparent since 2020, with the economic crisis first turning into a health crisis, followed by the energy crisis and inflationary pressures putting businesses under pressure. It could be said that these crises have emerged in different macroeconomic circumstances, but unfortunately, they have reinforced and exacerbated one another. In such a situation, it is essential to be prepared, aware, and able to respond to crises based on the quantity and quality of data within the firm. One of the prerequisites for the availability of data is the development of an appropriate accounting information system (Ratnatunga et al., 2012).

The reintroduction of strong and conscious crisis management functions was needed not only at the level of economic policy but also for companies. Once again, awareness, the application of appropriate management knowledge and skills, tailored risk-taking, and good organizational and courageous planning skills became important for companies (Abdelwahed & Soomro, 2023; Hohenstein, 2022; Abdalla et al., 2022; Klauser & Pauschinger, 2022). The focus has shifted to managers who are good at their job, can create real value for the business, and can set it on a growth path. However, the financial awareness of managers, corporate decision-makers, and the entire company plays a crucial role in this (Burchi et al., 2021; Toth et al., 2023), which essentially includes core financial literacy, knowledge of the financial management toolkit and its appropriate application to the life cycle of the firm, tax and accounting knowl-

edge and skills and a practical approach in these areas, the importance of financial planning, and the integration of macroeconomic elements surrounding the firm into its day-to-day operations (Zabolotnyy & Wasilewski, 2019). The ability to access appropriate funds efficiently and to find the financial source that best fits the firm's life cycle is crucial for financial awareness and crisis management (Akbar et al., 2021). Several studies have shown that the higher the financial literacy, the easier it is for SME owners to obtain credit from formal lending institutions such as banks (Addo & Asante, 2023).

To optimize their financial sustainability, meet challenges, give prompt responses to crises, and maintain and improve profitability, companies need to develop the right tools to identify their resources, their utilization paths, and the resulting costs. A management accounting information system designed to support management decision-making provides the basis for decisions on resources and workflows through management reports while providing reliable, targeted, and sufficiently detailed quantitative and qualitative information (Buchetti et al., 2022). Understanding and properly managing the costs incurred in the activities of an enterprise optimizes decision-making and thus makes the operation more competitive (Kubota & Okuda, 2022). Productive cost management achieves effective resource management, precise allocation of resources to the right products and services, and proper planning as well as management and control of costs (Lee et al., 2014). The preparation of a preliminary cost estimate, i.e., a cost plan, also plays an important role in cost management and financial planning (Jovanovic, 2012). The purpose of the preliminary cost estimate is to map and approximate the costs to be incurred across the entire business from multiple perspectives (cost type, cost center, cost object). It also provides information for the preparation of strategic and operational plans (Blocher, 2009). Previous research has shown that firms that analyze their cost structure more thoroughly and carefully can make more effective financial decisions (Tóth et al., 2017).

Costing, tracking resource use, comparing planned and actual costs, and continuous feedback on plans are of great importance, given the constantly and sometimes drastically changing operating environment, the significant increase in indirect costs, the complexity of activities, and the need to adapt to sometimes extreme external market demands and conditions. Managing, monitoring, optimizing, structuring, analyzing, comparing, and controlling costs, comparing and controlling plans and actual data all contribute to the development of an efficient and profitable business (Moisello, 2012). These are all elements of corporate financial awareness, i.e., a conscious corporate financial management toolkit (Putri & Hamidi, 2019). Knowledge of the costs incurred also influences financing issues and decisions, as costs that are incurred as expenses at the cash flow level affect the liquidity balance and its preservation. Nevertheless, a strategic management information system, an appropriate cost allocation method (Siguenza-Guzman et al., 2013), a well-designed cost management system, and the information that can be extracted from it play a crucial role in optimizing production, service delivery, informed pricing, marketing strategy and ultimately customer satisfaction (Roslender et al., 2024).

To prevent financial problems and payment difficulties from occurring, assertive and responsible planning provides sufficient justification for riskier and more costly borrowing. A well-thought-out capital structure plays a role in increasing the market value of a firm. The rapidly changing external and internal environment, crises, and pandemics provide new and instructive lessons for optimal capital structure and for a more flexible and rapid response (Mills & Mwasambili, 2022). The creation of significant leverage is risky in relation to overleveraging, but its conscious use can improve the profitability, competitiveness, and market growth prospects of the business, both domestically and internationally (González Calzadilla et al., 2022). In addition to its benefits, increased leverage may be a good choice when the conditions and payment capacity defined in the financial plan are fully understood and accepted. In addition to the opportunities and benefits of leverage, attention should also be paid to the emerging risks, which should be focused on during the planning phase. Risk cannot always be mitigated, but knowledge of the risk itself provides a basis for preparing for the consequences and reacting promptly (Hirdinis, 2019).

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Ensuring that the balance of income and expenditure creates a stable and continuous liquidity and solvency situation for the business is key. The decision-making process should consider, from both a strategic and an operational point of view, the optimal allocation of current resources and the involvement of external resources to provide the business with liquid predictability. Another consideration in maintaining an appropriate level of short-term financial position is to maximize the use of the assets (current assets) of the business in the short term while maximizing the long-term investment opportunities (Nguyen et al., 2020). Adequate financial planning and information contribute to financial stability and efficiency and, thus, to sustainable financial development (T. T. Nguyen et al., 2020).

Arguably, micro, small, and medium-sized enterprises that demonstrate greater financial maturity in their assessment of bank creditworthiness have a significantly reduced probability of default (PD). Enterprises with high levels of financial sophistication also benefit banks, as they are more likely to make informed decisions, thereby facilitating their ability to meet their financial obligations to banks as planned (B. Nguyen & Canh, 2021). Several studies have demonstrated that corporate financial literacy has a significant impact on loan repayment performance (Supriyadi et al., 2024). Research by Endris (2022) and Baidoo et al. (2020) also confirm that financial awareness has a positive and significant impact on loan repayment performance among micro and small enterprises. In this context, Endris (2022) makes several recommendations for lending institutions (especially banks) to provide basic financial and business education to small businesses.

The reviewed literature highlights the critical role of financial literacy and management tools in shaping the financial performance and sustainability of SMEs. It demonstrates that businesses with structured financial strategies and informed decision-making processes are better equipped to navigate economic challenges.

The purpose of the article is to analyze the relationship between financial literacy, company size, and their impact on access to financing and loan repayment performance among Hungarian SMEs from 2019 to 2023, for which the following hypotheses will be tested:

H1: Financial management plays a significant role in accessing funding. By time, this connection is stronger, and by time, even medium and larger SMEs show this strengthened connection.

H2: Financial management plays a significant role in the effect of the companies' financial decisions. By time, this connection is stronger, and by time, even medium and larger SMEs show this strengthened connection.

H3: Financial planning plays a significant role in accessing funding. By time, the connection is stronger, and by time, even medium and larger SMEs show this strengthened connection.

H4: Financial planning plays a significant role in the effect of the companies' financial decisions. By time, the connection is stronger, and by time, even medium and larger SMEs show this strengthened connection.

2. METHOD

To answer the research questions, a representative sample of approximately 2,500 items was taken from the Hungarian SME sector as a population over five years (2019–2023, approximately 500 companies each year). Data were collected with the help of the Hungarian Chamber of Commerce and Industry. Using their database, the online questionnaire reached approximately 20,000-25,000 companies annually, and an average of around 500 high-quality and evaluable responses were received. The sample is representative in terms of county as well as activity and national status. However, since this study does not aim to describe the SME sector but rather to investigate the correlation between these phenomena, where size is an implicit variable, it stratifies the sample evenly across the four segments of the SME sector. The stratification is indeed uniform every year because the χ^2 test is not significant ($p > 0.05$ in every year).

In the research hypotheses, the size of an enterprise is used as a background variable, and its impact is analyzed. According to the Hungarian law (in line with the EU classification), specifically Act XXXIV of 2004 on Small and Medium-Sized Enterprises and their Development (Kkv. Act), businesses are categorized as follows:

- Micro Enterprise (number of employees: fewer than 10; annual net revenue or balance sheet total: up to €2 million)
- Small Enterprise (number of employees: fewer than 50; annual net revenue or balance sheet total: up to €10 million)
- Medium-sized Enterprise (number of employees: fewer than 250; annual net revenue: up to €50 million or balance sheet total: up to €43 million)
- Large Enterprise (number of employees: 250 or more; annual net revenue: over €50 million or balance sheet total: over €43 million)

In this study, the size of the enterprises in the sample was determined solely based on the number of employees, but in a slightly different way from the categorization given by the law; several categories were defined to make the research results even more precise. 'Size' is defined as the average statistical headcount of a business, as categorizing by employee number is the prevailing practice in Hungary. This method is preferred because distinguishing enterprises based on turnover is challenging because of high inflation. It is broken down into four categories, based on the number of employees: micro-enterprises with less than 10 employees, small enterprises with 10-49 employees, and medium-sized enterprises, which were further split into the size category of 50-99 and the size category of 100-249 enterprises.

Table 1. Sample distribution by number of employees

Size	sample year				
	2019	2020	2021	2022	2023
>10	26,3%	27,2%	25,4%	25,2%	25,2%
>50	26,4%	26,8%	25,6%	26,4%	25,2%
>100	24,2%	23,1%	25,4%	24,0%	25,4%
>250	23,1%	22,9%	23,6%	24,4%	24,2%
Total	100,0%	100,0%	100,0%	100,0%	100,0%

To test the proposed hypotheses, partial linear regression models were developed, where the direct effects are quantified using standardized regression coefficients. The indirect effect, with the size of the enterprise implicitly functioning as a mediator variable, is assessed through the Sobel test. Given the extensive sample size, the behavior of the model is anticipated to demonstrate sufficient robustness. However, to detect the mediating effect in a safe and conclusive way, in addition to the Sobel test, the Aroian test and the Goodman test proposed in the literature (Baron & Kenny, 1986; Goodman, 1960; Sobel, 1982) are also conducted.

A variable can be considered a mediator if it transfers the influence of an independent variable to a dependent variable. Mediation can be defined as when

- the independent variable significantly affects the mediator,
- the independent variable significantly affects the dependent variable in the absence of the mediator,
- the mediator has a significant unique effect on the dependent variable, and
- mediating the relationship between the independent and dependent variables reduces their impact on one another.

Using these standards, one can make an informal determination as to whether mediation occurs. However, the formalized method proposed in the statistical literature for judging the role of the mediator will be used (Mackinnon & Dwyer, 1993).

The hypotheses express the expectations of how the financial management activities of companies have evolved compared to the last "year of peace," 2019, before COVID-19, which can be considered as a base year, and how this has contributed to efficient relations with banks, access to finance and the effectiveness of financial decisions.

The research framework model also includes these hypotheses. They are basically the direct effects of explanatory variables on the dependent variables measured by zero-order partial regression, but

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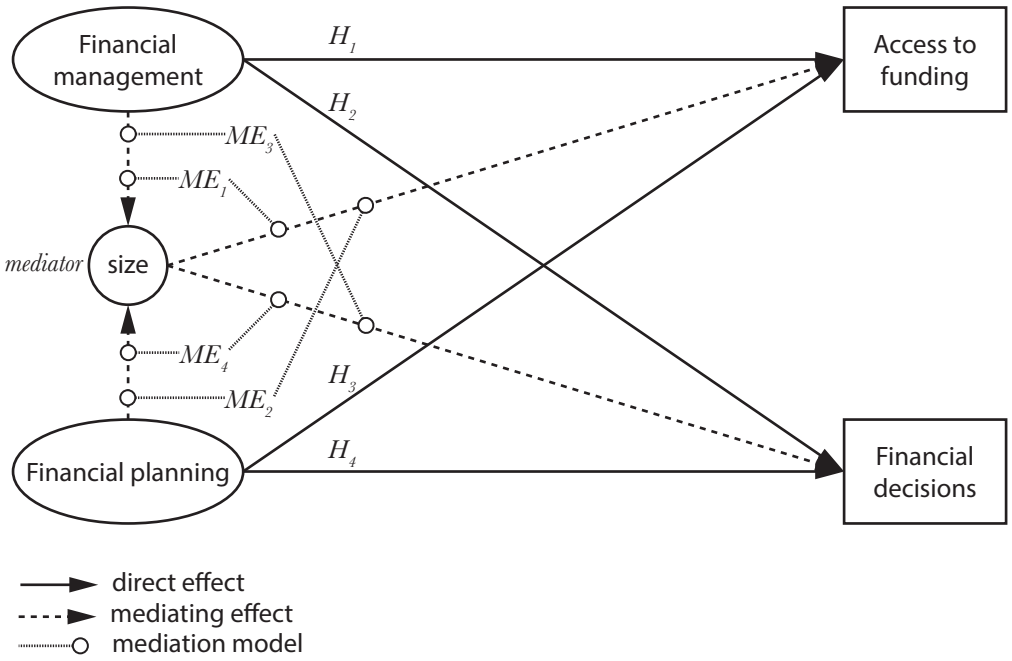

Figure 1. Structure of hypotheses

this is complemented by the mediating effects of enterprise size on the evolution of these correlations. In essence, the measurement of direct effects based on two partial linear regressions is complemented with four mediation models fitting the four hypotheses (H_1-H_4), where the mediating effect of enterprise size (ME_1-ME_4) is measured. The time horizon of the studies is implicitly incorporated into the model, which means that the zero-order partial models measuring the direct effects are constructed separately for three years. Thereby, it is possible to clearly infer how these direct relationships evolve over time. The implicit measures of indirect effects are applied to the entire sample. There are two reasons for this. Firstly, the methods are sensitive to the number of sample elements. Secondly, if the mediating effect is detected in the entire sample, the robustness of the methods enables us to conclude that the effect is also present in the (sufficiently large amount of) subsamples.

In this study, the model variables are derived from measured variables, and the methodology for constructing these factors has been described in previous studies. Hence, the variables in the model follow a standard normal distribution.

3. RESULTS AND DISCUSSION

In 2019, the Hungarian economy exhibited relative stability characterized by growth, a capacity for financial stability, and minimal inflation. This stability is mirrored at the corporate level, where financial management practices are generally balanced. However, for smaller companies (<10 employees), the financial management performance is notably negative, indicating that their capacity for financial innovation is below the average level. The COVID-19 pandemic caused an economic downturn in 2020, which was felt in all size categories, but especially in smaller companies. The year 2020 saw negative scores across all size categories, indicating that the financial management of businesses was facing serious challenges. In 2021, the financial management of smaller firms remained negative, but larger ones (<250 employees) started to slowly improve, partly reflecting the effectiveness of their crisis management strategies. In 2022, with the energy crisis emerging, companies faced new challenges, although the trend is slowly improving. This is especially true for medium and larger enterprises, where financial management seems to be stabilizing. In 2023, despite high inflationary pressures, indicators are positive in all categories, especially for larger businesses, indicating that their responses to the crises have proven successful.

Financial planning indicators seem to follow a similar pattern to financial management as a whole, suggesting a strong correlation. In 2019, financial planning was negative even for smaller firms, indicating that they were not sufficiently prepared for a major crisis. In 2020, the COVID crisis caused a significant deterioration in financial planning in all categories as businesses struggled to react to unexpected economic changes. This particularly hit smaller companies, where financial planning capacity remained weak. In 2021, there was a slight improvement, especially for larger companies, which managed to adapt to changes in the economic environment more efficiently. In 2022, the Russian-Ukrainian war and the energy crisis further aggravated the situation, but once again, larger businesses managed to improve their financial planning processes. In 2023, almost all size categories saw an improvement, especially in the case of larger companies, with financial planning at its relative highest.

In 2019, smaller businesses (<10 and <50 people) exhibited positive indicators regarding access to finance, suggesting that they had relatively easy access to securing resources. However, the economic crisis caused by COVID-19 in 2020 made it more difficult for almost all companies to access financial resources. This particularly affected smaller businesses, where figures dropped dramatically. In 2021, smaller businesses continued to face difficulties in accessing resources, but medium and larger enterprises started to show improvement. In 2022, amidst the energy crisis, the funding environment remained challenging; however, larger corporations were able to sustain relatively stable levels of access to funding. In 2023, although inflationary pressures were high, larger corporations (<250 employees) showed significant improvement, and a positive turnaround was seen in smaller corporations.

The impact of the crises is also clearly visible in financial decision-making, with smaller corporations (<10 and <50 employees) showing negative or very low figures in 2019, indicating that their financial decisions were not adequately thought out. In 2020, the COVID crisis severely set back the decision-making capacity of all size categories, particularly affecting smaller businesses. In 2021 and 2022, larger companies slowly started to recover, but smaller companies continued to experience difficulties. In 2023, despite high inflation, the financial decision-making of larger companies moved in a positive direction, and smaller companies also showed improvement, although these figures were still lower compared to larger firms.

The economic crises (COVID-19, war, energy crisis, inflation) have clearly had an impact on the finan-

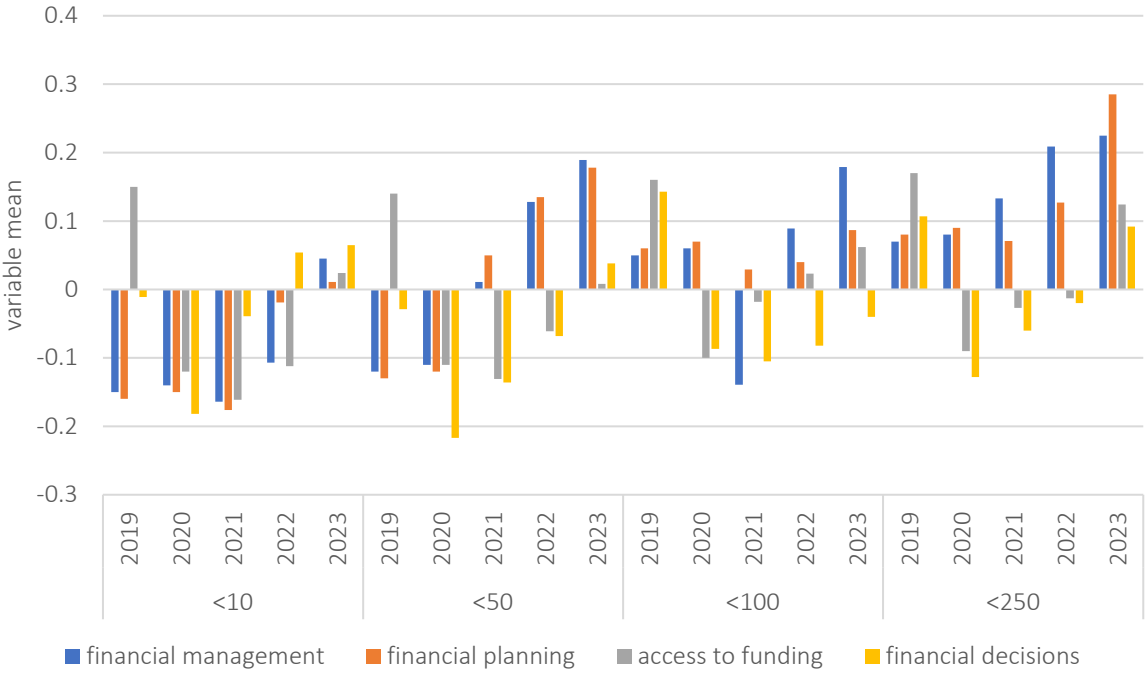

Figure 2. Means of model variables.

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cial performance of companies. Smaller companies were initially more vulnerable, but over time, financial management, planning, access to resources, and financial decisions improved, especially for larger companies. By 2023, all indicators showed improvement, suggesting that companies had adapted to the crises and strengthened their financial processes.

The data indicate a strong correlation between financial management (FM) and access to finance (AF). As financial management indicators of businesses improve over time, their access to finance also tends to increase, especially for larger enterprises. In 2020, when the COVID-19 crisis caused a significant downturn, both indicators deteriorated, suggesting that shortcomings in financial management directly affected access to finance. From 2022 onwards, however, as businesses' adaptability began to improve, the stabilization of financial management also helped access to finance.

The correlation between financial planning (FP) and access to finance (AF) is also significant, similar to financial management. Companies that implemented more forward-looking financial planning had better access to finance over time, which is especially true for larger companies. For example, between 2022 and 2023, despite high inflation and economic uncertainty, improvements in financial planning at larger firms helped them better access finance.

The correlation between financial management (FM) and financial decisions (FD) is also strong. The data show that as the financial management of businesses improved, so did their indicators for financial decisions. This became particularly important after the crises, when companies optimized their financial processes more successfully, which allowed them to make more efficient decisions. The biggest improvement was seen in larger companies, where the stabilization of financial management clearly helped them to make more informed financial decisions.

There is also a positive correlation between financial planning (FP) and financial decisions (FD). As financial planning improved, especially for medium and large enterprises, their financial decisions became more informed. This becomes particularly evident after 2022 when companies were able to plan better in the face of economic difficulties, which contributed to more efficient decision-making.

In the analysis, the above research framework model was run and tested. The first mode of action under scrutiny was the direct effect of financial management (FM) on the access to funding (AF) factor and the indirect effect exerted through business size. It can be seen that both types of effects are significant. In fact, the effects appear to strengthen over time, and size also has a strong mediating effect on this relationship. Conclusively, it can be stated that the effect strengthens with increasing size.

Table 2. Main effect and mediation effect for financial management and access to finance

Year	Main effect (H1)		Mediation 1			
	FM → AF		FM → size		size → AF	
	Beta	Sig	Beta	S.E.	Beta	S.E.
2019	0,121	0,005				
2020	0,112	0,021				
2021	0,181	0,001	0,215	0,034	0,275	0,032
2022	0,194	0,000				
2023	0,217	0,000				
ME1	**z**	**S.E.**	**p**			
Sobel	5,093	0,00116	0,000			
Aroian	5,071	0,00117	0,000			
Goodman	5,116	0,01166	0,000			

The situation is similar for the second sub-model, but for this, both direct and mediating effects are slightly weaker yet still significant, and the relationship is stronger over time. This suggests that more robust and more efficiently managed financial planning undoubtedly provides better access to finance, and a significant yet slightly smaller effect of business size is also seen here.

Table 3. Main effect and mediation effect for financial planning and access to finance

Year	Main effect (H2)		Mediation 2			
	FP → AF		FP → size		size → AF	
	Beta	Sig	Beta	S.E.	Beta	S.E.
2019	0,159	0,009				
2020	0,094	0,042				
2021	0,110	0,002				
2022	0,139	0,000	0,187	0,037	0,275	0,032
Year	0,185	0,000				
ME2	**z**	**S.E.**	**p**			
Sobel	4,357	0,01184	0,000			
Aroian	4,335	0,01193	0,000			
Goodman	4,379	0,01173	0,000			

The third model highlights a stronger relationship between financial management and the efficacy

of financing decisions, i.e., the better a company's financial management system, the more efficient the financial decisions it perceives to reasonably make. This relationship becomes stronger over time, even if smaller than the previous one, while the size of the company remains significant.

Table 4. Main effect and mediation effect for financial management and financial decisions

Year	Main effect (H3)		Mediation 3			
	FM → FD		FM → size		size → FD	
	Beta	Sig	Beta	S.E.	Beta	S.E.
2019	0,114	0,004				
2020	0,127	0,002				
2021	0,207	0,000				
2022	0,215	0,000	0,215	0,034	0,171	0,039
Year	0,225	0,000				
M3	**z**	**S.E.**	**p**			
Sobel	3,603	0,01020	0,000			
Aroian	3,573	0,01029	0,000			
Goodman	3,634	0,01012	0,000			

The final sub-model investigates the direct and indirect relationships between financial planning and financial decisions. It is evident that a somewhat weaker yet relevant and significant relationship exists between the two indicators, mediated by company size, and although the strength of the relationship is least dependent on company size, this indirect mediating effect is still relevant and significant.

Table 5. Main effect and mediation effect for financial planning and financial decisions

Year	Main effect (H4)		Mediation 4			
	FP → FD		FP → size		size → FD	
	Beta	Sig	Beta	S.E.	Beta	S.E.
2019	0,104	0,009				
2020	0,101	0,011				
2021	0,161	0,000				
2022	0,125	0,001	0,187	0,037	0,171	0,039
Year	0,181	0,000				
ME4	z	S.E.	p			
Sobel	3,312	0,00965	0,001			
Aroian	3,276	0,00976	0,001			
Goodman	3,350	0,00954	0,001			

The model shows that there is a strong correlation between financial management and access to finance, which has become stronger over time. In this, company size has a measurable mediating impact, so the larger the company, the stronger this correlation. Financial planning also improves access to finance, although the effect is somewhat weaker compared to financial management, and here again, it can be seen that business size has a mediating effect. Financial management also has a strong impact on the financial decision-making of a business. The better a company manages their finances, the more effective decisions it can make, and the closer the relationship becomes over time. Although company size plays a smaller role in this case, it is still an important mediating factor. The relationship between financial planning and financial decision-making is also significant, but here, company size has less influence on the strength of the relationship while it still has a significant mediating effect. These relationships are shown in Figures 3 and 4.

The mediating effect of company size is both relevant and significant across all contexts. It can be concluded with a high degree of confidence that company size has a substantial impact on the relationship between elements of financial culture. An interesting result of the model, however, is that the effect is strongest in the relationship between financial management and sources of funding and weakest in the relationship between financial planning and financial decisions, implying that the strength of the latter relationship is less sensitive to company size.

After running and testing the model, the analysis confirms that financial management significantly influences companies' access to finance (*H1*). Over time, as the crisis deepens, this relationship has become stronger, especially for medium and larger SMEs, where the impact of financial management on access to finance is becoming stronger and is positively received by financing banks.

In this study, substantial evidence was found of the role of financial management in shaping companies' financial decisions (*H2*). This statistically verifiable relationship has strengthened year over year throughout the study period, and, as with access to finance, the effect is even more pronounced for medium and larger SMEs.

In addition to the above, financial planning has a significant impact on access to finance (*H3*), and this correlation too has become much stronger by 2023 compared to 2022. This trend is more pro-

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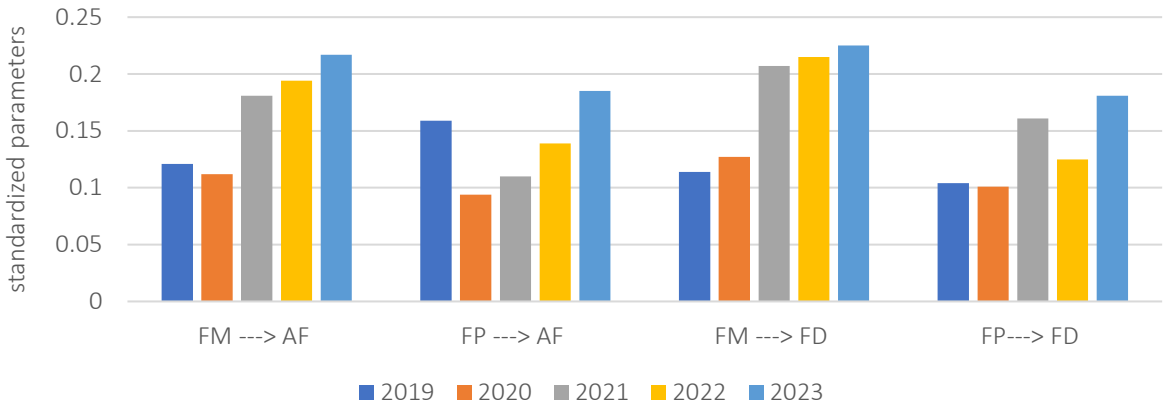

Figure 3. Main effects of the model at various time

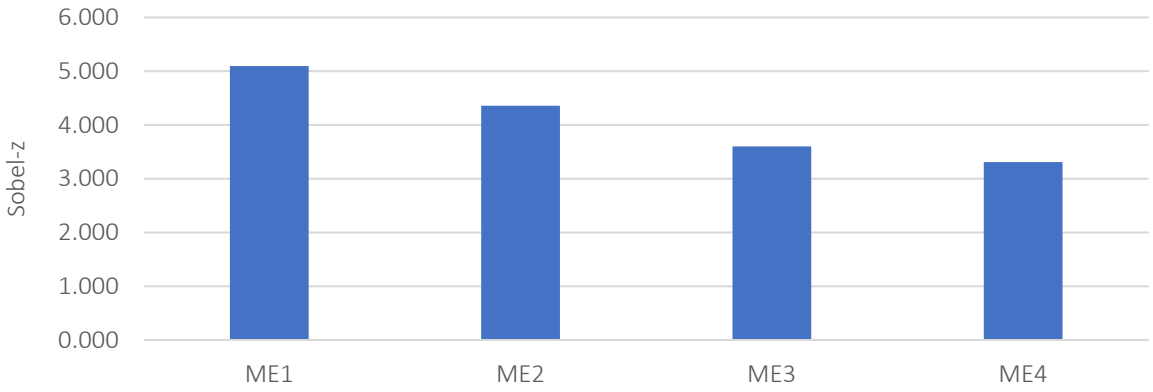

Figure 4. Mediating effects of the model

nounced for medium and larger SMEs, where the relationship between planning and access to finance is becoming more significant, but the same relationship is also present in smaller SMEs. Evidence was also found that financial planning plays a key role in influencing companies' financial decisions (*H4*). Over time, this relationship has also strengthened, especially for medium and larger SMEs, reflecting the growing importance of strategic financial planning.

This study demonstrates that financial management is a critical factor influencing both access to finance and the financial decision-making processes of enterprises. Over time, this correlation has become stronger, especially for medium and larger-sized SMEs. This suggests that companies need to continuously improve their financial management practices to better exploit financing opportunities and make more efficient decisions. The mediating role of company size is also a notable finding. For medium and larger SMEs, the impact of financial management and planning is stronger, suggesting that as companies grow, they become increasingly dependent on structured financial processes and, at the same time, become more resource-intensive to succeed. For smaller companies, this may be a warning that, regardless of their size, they may want to strengthen their financial strategies in a timely manner.

The significance of financial planning is evident in its dual role in facilitating access to finance and enhancing the efficiency of financial decisions. Strong and thorough financial planning allows companies to access funds more easily and make better-informed decisions. This is particularly true for medium and larger companies, but smaller firms can also benefit from an increased role in planning. The findings also suggest that continuous improvement in financial management and planning is becoming increasingly important for companies.

This is underscored by the fact that the smallest enterprises are the ones most in need of devel-

oping corporate financial literacy. Based on the analysis, it can be assumed that if financial literacy among smaller enterprises were stronger, this sector would have even easier access to external financial resources, which would clearly support the Hungarian lending-based economic growth model and sustainable development.

This research also identified a direct and significant correlation between financial literacy and SME credit repayments. This is attributed to financial awareness, which enables SME owners and management to better comprehend the implications of their financial decisions, which also enables them to manage their business operations and finances more effectively.

The correlation found in this study suggests that an increase in financial knowledge and skills directly affects the probability of accessing credit and loan repayment performance in a credit-constrained situation. Financially literate SMEs are better prepared to repay loans on time, as they are able to adequately plan their finances and are also better at managing the risks they face. Furthermore, the study highlights that financial literacy not only improves credit repayment but also contributes to the long-term sustainability and growth of the business. Increasing financial literacy in SMEs is therefore not only important for debt repayment but also crucial for the overall success of the enterprise.

Considering the established findings, along with those of other authors (Sthembiso Msomi & Nzama, 2022), in line with a positive and statistically significant correlation between corporate financial literacy and borrowing, it can be recommended that most participants in the SME sector engage in business finance training. Such training can facilitate knowledge transfers from government, advocacy groups, and the central bank, thereby enhancing financial literacy, as this can strengthen relationships with banks and improve access to funds.

CONCLUSION AND LIMITATIONS

The purpose of this study was to examine the relationship between financial literacy, company size, and their influence on access to financing and loan repayment performance among Hungarian SMEs over the period of 2019–2023. The analysis focused on how financial management and planning practices evolved during a time marked by significant economic challenges, including the COVID-19 pandemic, energy crises, and inflation.

The results indicate that effective financial management and planning significantly enhance both access to financing and the quality of financial decisions. Medium and larger SMEs showed a more pronounced ability to adapt to economic uncertainties, with improved financial processes correlating with better funding opportunities and decision-making efficiency. Smaller SMEs, however, faced more significant challenges, emphasizing the need for targeted improvements in their financial practices.

The findings underscore the critical role of financial literacy in supporting SME sustainability and resilience. Companies with stronger financial cultures are better equipped to navigate crises, secure financing, and make informed decisions. As such, SMEs, particularly smaller ones, should prioritize the development of their financial strategies to improve competitiveness and long-term stability. These insights highlight the importance of fostering financial literacy as a cornerstone for sustainable economic growth and business success.

Although the research methodology and model have been carefully designed, they have some limitations. The research is based on representative samples, but since the aim is not to describe the SME sector but to investigate correlations, the sample distribution may still raise further questions. Due to the uniform stratification, the descriptive results do not accurately represent the population; however, they are suitable for examining the relationships between phenomena. While direct comparisons over time effectively illustrate effects and trends, the random sampling of different individuals across various

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time periods renders this approach more suitable for examining relationships between phenomena, as outlined in the research hypotheses, rather than for evaluating the overall situation. Finally, the model does not account for external factors beyond financial management and planning that may also influence the financial decisions of enterprises, such as differences by industry, market competition, and macroeconomic policies.

AUTHOR CONTRIBUTIONS

Conceptualization: Róbert Tóth, Richárd Kása, Csaba Lentner.
Data curation: Richárd Kása.
Formal analysis: Richárd Kása.
Funding acquisition: Csaba Lentner.
Investigation: Róbert Tóth, Richárd Kása.
Methodology: Richárd Kása.
Project administration: Csaba Lentner.
Resources: Róbert Tóth.
Software: Richárd Kása, Vitéz Nagy.
Supervision: Vitéz Nagy, Csaba Lentner.
Validation: Róbert Tóth, Vitéz Nagy.
Visualization: Richárd Kása, Vitéz Nagy, Csaba Lentner.
Writing – original draft: Róbert Tóth.
Writing – review & editing: Richárd Kása, Vitéz Nagy, Csaba Lentner.

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