# Identifying the Influencing Factors of Financial Literacy Across Pre- and "Post" Pandemic Times at the Hungarian SMEs

**Róbert Tóth[1], Richárd Kása[2], Csaba Lentner[3*]**

[1]Senior Lecturer, Institute of Economics and Management Faculty of Law of the Károli Gáspár University of the Reformed Church in Hungary, H-1042 Budapest, Viola u. 3-5

[2]Senior researcher, Department of Management, Budapest Business School. kasa.richard@uni-bge.hu

[3]Full Professor, Faculty of Governmental and International Studies at University of Public Service, Budapest, Lentner.Csaba@uni-nke.hu * Corresponding author

Abstract: *One of the key objectives of this study is to illustrate the importance of corporate financial culture by seeking to explore the macroeconomic and microeconomic processes that require the presence of corporate financial culture. In addition to interpreting theoretical findings, the analysis based on sampling in the SME sector seeks to demonstrate the relationship between public intervention, especially in crisis situations, and the level of corporate confidence in the business environment, and how it affects corporate financial performance and quality of culture. Moreover, the analytical part of the study also addresses the role of training in corporate financial culture. At the same time, it draws the attention of those interested in the topic to the importance and significance of financial awareness.*

Keywords: *corporate finance culture; business environment; trust; training; economic policy*

## 1 Introduction

From the beginning of 2020, the Covid-19 pandemic posed new challenges for the whole world, including Hungary. Numerous domestic and international studies address the economic and social effects of the epidemic and in many cases compare them with the specificities of the 2007-2008 economic crisis. It is important to note, however, that the two crises occurred for completely different reasons, but this only nuances the differences between the interventions. The similarity between the two crises is that the role of the state in stimulating the economy is extremely emphasized, and (which is also the central topic of our study) it requires adequate awareness and determination from market participants. In this area, let us think about the effects of the lack of a financial culture are constantly being felt, and the consequences of its manifestation, for example, the global events of the last decade that we are being forced to suffer [1]. The development of financial culture – as a result of the financial crisis that unfolded in 2008 – is becoming an increasingly common goal, especially in developing countries, including Hungary, as the development of financial culture is in the common interest of all economic actors [2]. At the micro-economic level, households and businesses with a higher level of financial culture are more likely to avoid financial decisions leading to a crisis [2] [3] and to make economic decisions that have a positive impact on the business as a whole. It indirectly contributes to the stability of a country's corporate and state budget systems. The development of a financial culture is also in the interest of the state, as a higher level of financial culture requires less emphasis on redistribution and stabilization goals and can have a positive impact on a country's competitiveness [4] [5].

Like the crisis of 2007/2008 and the Covid-19 pandemic highlights the need for change by economic agents to mitigate the effects of the recession. One of the keys to this may be a change in financial behavior.

# 2 The Importance and Definition of Financial Literacy

## 2.1 The Importance of the Corporate Financial Culture

Following the 2008 financial crisis banks had to introduce strict regulations – for example, increasing the Tier1 capital ratio –, which led to credit supply constraints [6]. Taking advantage of this situation, alternative creditors have appeared on the corporate loan markets who are considered riskier, and entirely new models have begun proliferating. Such an example are the online marketplace platform’s lending and the crowdfunding constructs. In our opinion, this is where financial ethics and/or financial literacy play an outstanding role and are indispensable in the everyday life of the business world. This is underlined by Grifoni and Messy [7] as well, who conclude in their study that decision-makers regard proper financial literacy as an inevitable life-skill in business. According to Csiszárik-Kocsir and Garai-Fodor [8], the development and improvement of financial culture and knowledge is a key issue for the future.

Asenge et al. [9] found that a part of the SME sector does not even have savings and investment plans, and company leaders are often lacking in knowledge of corporate financing. All of these factors have an influence on corporate performance

[10]. Financial culture can determine also the funding structure. It can be seen that companies with a higher financial culture are more open to new financing opportunities [13]. It must be mentioned that smaller businesses are often without a business strategy and have a low capacity-utilization rate. Furthermore, in many cases the human resource is not properly qualified. Klapper, et al. [4] also emphasise that MSME actors have low levels of knowledge of financial management (including planning, financial management, financial decisions, and limited information on financial access). Eniola and Entebang [10] point out that company managers have to solve additional problems that occur among SMEs, including corporate strategy and corporate structure development, efficiency improvement of quality and performance evaluation systems and production processes. According to the authors, all of these refer to financial needs. The studies written by Zabolotnyy and Wasilewski [11], as well as Ye and Kulathunga [12] complement this line of thought, given that they also reflect on the significance of financial sustainability. Ye and Kulathunga [12] also emphasize that financial literacy is a very important predictor of access to finance, and of attitudes to financial risk and sustainability in SMEs. Asenge, et al. [9] conclude that in order to eliminate the above listed factors, an adequate standard of financial literacy is essential. Asenge et al. [9] found that a part of the SME sector does not even have savings and investment plans, and company leaders are often lacking in knowledge of corporate financing. All of these factors have an influence on corporate performance [10]. Financial culture can determine also the funding structure. It can be seen that companies with a higher financial culture are more open to new financing opportunities [11] [12].

## 2.1 Interpretation of the Corporate Financial Culture

Based on the above it is clear that the development of financial literacy is a priority these days. However, as Bárczi and Zéman [14] and Heleta [15] pointed out – similarly to the OECD [16] –, there is no universally accepted definition of financial literacy, nor an investigative methodology, despite the fact that several national and international authors have proposed their own definitions [30] by Atkinson and Messy [17] consequently, the existing definitions vary greatly. They also argue that this makes the measurement of the standard of financial literacy a complex and difficult task. Remund [18] shares these views on the description and content of financial literacy. For him it is not satisfactory that all those who have investigated this area use their own definitions, and usually define financial literacy in a way that best fits their research aims and research questions. The level of financial literacy is of utmost importance for all economic actors – households, businesses, the state and its institutions [19] [20]. On the micro level, companies with higher standards of financial literacy are more likely to avoid disadvantageous financial decisions, such as expensive loans or a low savings rate [16]. On the macro level, Klapper, et al. [4] concluded that the higher the level of financial literacy in a society, the more prominent are the savings available in a given national economy. Bartlett and

Chandler [21] defines financial literacy as collecting, interpreting and evaluating the information needed for decision making, which helps companies achieve optimal financial output. In this approach, controlling activities are the key. Nunoo and Andoh [22] also investigated SME sector financial literacy and found that the financial literacy of the entire company depends on company owners' financial knowledge levels and the extent of financial services used. Basically, the authors define financial literacy as managerial knowledge. Their study reveals that high standards of corporate financial literacy promote a company's progress, and improve its performance, for example ensure its growth. The co-authors' analysis of Ghanaian businesses managed to prove the connection between financial literacy and financial performance.

The ability to make informed and proactive decisions is also stressed by Mak and Braspenning [23], as consumers can only make responsible decisions in the possession of an adequate quality and quantity of information. Market transparency plays a key role here since in their presence consumers are encouraged to contact financial institutions (e.g. lending). Sugawara and Zalduendo [24] also emphasize knowledge, saying that financial literacy is the sum of knowledge and skills, which help the effective management of financial processes – to ensure stability and financial well-being. Atkinson and Messy [17] share similar views; for them financial literacy is the combination of awareness, knowledge, skills, attitudes and decision making behaviour which supports financial well-being.

In line with Marriott and Mellett's [25] hypothesis, if there is a lack of appropriate skills and financial knowledge, managers are likely to make erroneous decisions (and thereby affect corporate performance). In their research, they established the following definition: financial awareness is no more nor less than a manager's ability to understand and analyse the whole range of financial information in accordance with specific economic events. All those who wish to become successful company leaders and want to keep up with and understand the financial world have to possess these skills. They have to be able to read the balance sheet, and financial reports issued by corporate or financial institutions, and understand their mutual systems of relationships and influence.

Dahmen and Rodríguez [26] made their analyses on the financial literacy of small enterprises in the USA. They found that these businesses comprise the backbone of the American economy; therefore, corporate financial literacy has a major role from the perspective of the entire economy. They concluded that companies and the U.S. economy are in the hands of company owners and managers, thus financial knowledge and skills are of the utmost importance in a company (e.g. understanding and monitoring financial processes, measuring corporate performance, etc.). Their final conclusion was that there is a strong correlation between corporate financial literacy and business success. Financial literacy involves financial knowledge, such as revenue management, and understanding of cash-flow and debt management. Putri and Hamidi [27] and Lusardi and Mitchell [29] almost completely agree with the above, only adding that financial literacy has a positive and significant effect on investment decisions and their outcomes, as well.

According to Umogbaimonica et al. [28], financial literacy has three dimensions. First, the knowledge of financial concepts and theories; second, financial behaviour; and third, financial attitudes. In their opinion, these three dimensions constitute financial literacy, which includes education and training, and expertise in different financial areas. As they see it, financial literacy is the ability that enables the efficient and effective management of financial processes. According to them, financial literacy incorporates the knowledge of financial and economic rules and contexts, such as financial planning, interest rate calculations, debt management, effective investment and saving techniques – taking into account the time value of money. In their study, they claim that the lack of financial literacy is very likely to lead to inappropriate – i.e. ineffective – financial decisions, which may have a negative impact on financial operations. The authors examined the relationship between financial literacy and corporate performance – which in their understanding is profitability and sales turnover growth.

## 2.3 The Importance of Government Involvement and Trust

The State has resumed its recovery into the economy in order to resolve the new type of crisis that struck all economies in 2008. Once again, the need for state intervention in certain areas of the economy and its appropriate form has come to the forefront. The coronavirus crisis that spread in 2020 has once again clearly shown that the role of the state is crucial, especially in dealing with the unexpected economic and social crisis. State intervention is needed to resolve the difficulties from budgetary and central bank sources, and are mostly resolved centrally in the shortest and most efficient way possible. The events of the last decade have highlighted from several perspectives that the market alone is unable to deal with economic challenges, in which confidence plays a key role. If we look at the role of the state in the SME sector, trust is a definitely a rule, that is, it requires the application of predictable economic policies. The growth prospects of the SME sector are best if they are supported by the right role in the state, in the right regulatory environment, and with the right financing opportunities.

Reducing and eliminating the lack of trust should be a priority in all national economies, one of the possible means of which is to increase financial culture and knowledge [31], which will increase the transparency and predictability of economic processes. The role of the state as a regulator, but also for banks, it is extremely important that there is no lack of confidence, as this will slow down growth, and a credit crush may develop. The regulatory role of the state which at the same time is also crucial for the banks, in order to avoid losing trust, for it can curb growth, and credit crush may develop. It can be established that improving the quality of financial culture reduces negative prejudices, helps strengthen trust, the functioning of appropriate business processes and thus economic development [32].

The importance of conscious state intervention in the functioning of the economy can still be seen. In their book published in 2014, titled Creating a Learning Society, Joseph Stiglitz and Bruce Greenwald, argue that the state cannot be content to create a supportive business environment, but must also actively intervene in economic processes [33]. Over the past two crises, the role of fiscal policy has become significantly more important, playing a key role in improving competitiveness, boosting confidence and economic growth. In their study, Blanchard and Summers [34] state that „[...] the need has led to the rediscovery of fiscal policy as a means of stabilization during the crisis .... ". However, in addition to fiscal policy, the role of monetary measures is not negligible in fact it is catalytic [48].

Fiscal and monetary policies also have an important role to play in creating the right business environment and the right ecosystem of confidence for businesses. One of the most important features of the business environment is that it also affects the operation, often the efficiency and effectiveness, of businesses. Inasmuch as we accept this, it can be said that the business environment affects the competitiveness of companies and the national economy. In developed countries, the goal is to make the business environment more "business-friendly", so that the state and its institutions treat businesses as partners. It can be stated that if companies "feel good" and consider their micro- and macro-environment to be supportive, they will be able to operate much more effectively, which is also in the public interest (see expansion of employment, increase in tax payments, economic growth, etc.).

Institutions also have a key role to play in improving the business environment, one of the possible means of which is to increase institutional social responsibility, one of the specific elements of which is the commitment to improving the financial culture [35]. It can be said that financial education plays a key role in the rapidly developing modern economies. Csiszárik-Kocsir in her works [36] [37] [38] [39] states that in an ever-changing, rapidly changing world, in addition to innovation and continuous development, the development of financial awareness is also indispensable and imperative. Several analyses highlight the importance of training, which is clearly interpreted as part of a financial culture [20], [40] [41]. In the opinion of the cited authors, financial training mostly have positive results, as they contribute to the growth of the company. Furthermore, they determine a close link between the business environment and financial education. In their view, the state has a key role to play in ensuring that businesses have access to appropriate training to gain up-to-date financial knowledge. They also mention that the unfavorable business environment and the high interest rate environment increase the importance of business and financial education thus, indirectly the importance of developing a financial culture.

In Plakalović's study [42] he also examined the level of financial literacy and the success of companies. His analysis shows that "a higher level of financial literacy can bring significant benefits. SMEs can save more and improve their risk management if for example they take out insurance policies. Their overall balancing effect could be even greater: companies' increased demand for financial services could improve risk-sharing, reduce management volatility and accelerate overall financial development. Furthermore, all this can promote competition…". However, it also highlights that the low level of financial literacy shows that financial literacy and skills are not key to the success of SMEs, for as the lack of financial awareness may not be seen as an obstacle to the successful management of SMEs. From all this, it can be concluded that financial culture is not the only and most important factor in competitiveness. In Plakalović's analysis, he links the corporate business environment to financial culture and in his view if it is supported, it will have a positive effect on financial awareness as an external effect (see education, and government programs). He attributes great importance to education in his research and states that "raising the level of financial literacy in a broad sense will also increase the general and economic culture of the population and entrepreneurs.." [43].

# 3 Methodology

The research population consists of companies with a Hungarian location, 25-250 staff headcount and an annual turnover lower then 50 million Euro or annual balance sheet total does not exceed 43 million Euro (in accordance with EU SME recommendation 2003/361). On this basis the population size is N=32.157 (Hungarian Central Statistical Office, 2017). To determine the optimal sample size a 95% confidence level were applied, and we aimed for a standard error under 5%.

A systematic random sampling method has been followed in our survey: companies were contacted during two national roadshows between February and May 2019 (thus the sample contains companies with financial data based on the 2018 closed financial year), and a repeated sampling has followed the first one among the same respondents between 2021 May and August. Ultimately, the hypotheses were tested on responses from $n_1$=511 enterprises from survey of 2019 and $n_2$=500 enterprises of 2021 (11 were unavailable or refused to answer. Therefore, for 2019: (1) sample size: n=511, (2) standard error: 4.31% and (3) confidence interval: 95% and for 2021: (1) sample size: n=500, (2) standard error: 4.35% and (3) confidence interval: 95%. The samples thus taken are considered representative for the consolidated sectoral breakdown of the Hungarian economy (Mann-Whitney U-test: $p_1$=0,117; $p_2$=0,108) and provides a uniform distribution for size categories based on number of employees (Kolmogorov-Smirnow test: $p_1$=0,071; $p_2$=0,068).

Accordingly, the samples are suitable for drawing conclusions and generalizing. Considering the distribution of the sample, it can be seen that it is balanced in other respects as well: half of the sample is below 100 million HUF in annual net sales, and the other half is above it, half of the companies in the sample were established before 2000 and the other half after 2000, the South Transdanubia region is slightly underrepresented, but the rest are present in the sample at 10-15%. Most businesses are owned by domestic individuals (88%).

Table 1
Sample distribution

| | | **n%** | | | | **n%** |
|---|---|---|---|---|---|---|
| National economy | Agriculture, forestry and fishery | 4,7 | | NUTS-2 regions | Northern Hungary | 14,8 |
| | Industry | 28,2 | | | Northern Great Plane | 13,8 |
| | Service | 67,1 | | | Southern Great Plane | 13,4 |
| Size | Small business | 53,6 | | | Central Hungary | 13,4 |
| | Medium business | 46,4 | | | Central Transdanubia | 15,2 |
| sales revenue (million HUF) | 1-15 | 26,1 | | | Western Transdanubia | 12,3 |
| | 16-29 | 5,5 | | | Southern Transdanubia | 5,1 |
| | 30-50 | 5,7 | | | Budapest | 11,9 |
| | 51-100 | 9,1 | | Owner-ship of back-ground | A domestic individual | 36,5 |
| | 101-500 | 17,0 | | | several domestic individuals | 51,1 |
| | 501-1000 | 16,8 | | | Domestic and foreign private individuals | 3,1 |
| | 1001-5000 | 19,7 | | | Domestic legal person | 2,4 |
| Year of incorporation | 1990 előtt | 7,8 | | | Domestic and foreign legal people | 1,8 |
| | 1990 - 1999 | 42,2 | | | Others | 5,1 |
| | 2000 - 2009 | 29,4 | | | | |
| | 2009 után | 20,6 | | | | |

## 3.1 Research Questions and Hypothesis

Based on our literature review and previous research according to our research question of how financial literacy impacts on business environment, trust and training, we formed the following hypotheses:

- H1: How a company judges the business environment in which it operates- and how much trust you have in your environment will directly affect the quality of your corporate financial culture. (The environment and the state and market environment should be separated over time.)
- H2: The perception of the business environment and the level of general trust also have an indirect effect on the financial culture of companies, as we assume that they affect how much a company spends on training, which in turn directly affects the financial culture.

To test our hypotheses, we use a path model, which is a series of regression models built on each other. Pearson's zero-order correlation between independent and dependent variables is broken down into two additive parts. One part is the effect that the independent variable exerts directly on the final dependent variable, and the other part is the effect that the independent variable exerts on that variable through other intermediate variables. To do this, regression relationships must be constructed and the strength and significance of the path models must be calculated, i.e., a structured series of regression calculations must be performed [44, 45]. All exogenous variables in the path model are standardized as variables resulting from factor analysis [46]. We try to give an answer as to the extent to which a change in the independent variables, the dependent variable, may entail [47]. It allows the development of explanatory models by exploring the hidden trends behind the variables [48]. The analyses are performed in the usual way for linear regression, in which the following conclusions are drawn based on [48]: The fit of each model is tested by the F-test. This is acceptable if the significance level of the test is $p < 0.05$. The R2 coefficient of determination, which indicates the explanatory power of the model, is then calculated, and the standardized regression parameters (β) of each involved independent variable are defined if they fit the model significantly ($p < 0.05$) [49].

In the present article, for the sake of greater clarity, we consider only those independent variables that are significant and have a sufficiently large parameter ($|\beta| > 0.1$) – i.e., they represent an appropriate load in the explanation of the dependent variable.

# Empirical Results and Discussion

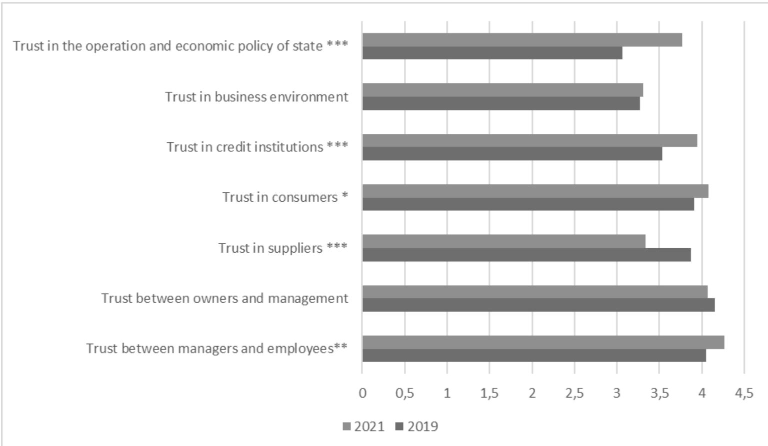
The variables of the path model were chosen based on the hypotheses and the requirements of the method as follows:

The explanatory variables included the assessment of the business environment (Likert scale variable: 5 = excellent, 1 = weak, not at all supportive) and trust (two variables aggregated by exploratory factor analysis with a standard normal distribution), which includes both microenvironmental and macroenvironmental trust levels. As a moderating variable, we indicated corporate training (a variable measured on a scale: average training costs per capita), while financial culture was identified as the outcome variable.

The perception of the business environment among Hungarian companies is largely average, with more than half of the respondents (51.7%) rated it as menial, the average rating is slightly higher than the mean, 3.07. However, almost a fifth of the companies (18.2%) consider the supportive nature of the Hungarian business environment to be below average and 30.2% above-average. These ratios did not change significantly by 2021 ($p > 0.05$).

In the research, we measured trust in the business environment with seven variables, which are the following: (1) trust between managers and subordinates, (2) trust between owner and management, (3) trust with suppliers, (4) trust with customers,

(5) trust with credit institutions, (6) trust with the business environment, and (7) trust in the operation of the state and economic policy. Satisfaction with the aforementioned was also measured on a five-point Likert scale.




**: p<0,05; **: p<0,01; ***: p<0,001*

Figure 1

Satisfaction of companies with environmental trust

Figure 1 shows that between the two sampling periods, trust in the functioning of the state and economic policy, trust in credit institutions, and trust between company managers and employees improved significantly. This trend is clearly due to the state measures and the crisis management interventions implemented by the Hungarian government in the last almost 2 years [51] [52]. However, the trust in customers and suppliers has declined, and in essence, trust in owners and trust in the business environment has stagnated.

Environmental trust variables were combined by exploratory factor analysis using the principal component method, Kaiser normalization, and varimax rotation. The key performance indicators in the analysis correspond to the levels expected in the statistical methodology [50]: the Kaiser-Meyer-Olkin statistics are 0.811 and 0.789, respectively; the Bartlett spherical test significant is ($\chi 2$ = 974.924; p = 0.000 and $\chi 2$ = 934.823; p = 0.000, respectively). After merging the seven individual indices, two factors emerged. These explain a total of 63.739% and 61.104%, respectively, of the total variance explained by the seven measured variables. The rotated factor loading of the combined factors on the dominant components exceeds 0.6, based on these, the model fits well. Based on their content, the components can be named as follows: the first factor compresses variables related to microenvironmental trust, while the second compacts variables related to the macro environment.

With regard to the training, we found that 65.4% of the SMEs in our sample regularly spend a significant amount on employee training, the largest amount being between 50-300 thousand HUF – while large companies typically spend over 10 million HUF.

Table 2
Rotated component matrix

| | Component | | | |
|---|---|---|---|---|
| | Trust in the micro environment | | Trust in the macro environment | |
| | 2019 | 2021 | 2019 | 2021 |
| trust between managers and employees | **0,823** | 0,069 | **0,783** | 0,108 |
| Trust between owner and management | **0,805** | 0,115 | **0,755** | 0,216 |
| Trust in consumers | **0,636** | 0,412 | **0,723** | 0,287 |
| Trust in suppliers | **0,619** | 0,429 | **0,608** | 0,361 |
| with the operation of the state, economic policy | 0,048 | **0,856** | 0,084 | **0,811** |
| Trust in the business environment | 0,253 | **0,816** | 0,309 | **0,798** |
| Trust in the credit institutions | 0,247 | **0,673** | 0,276 | **0,612** |

**Bold**: variable fits on the certain component

However, if we break down the amounts spent by the number of employees, it seems that almost 40% of the companies spend less than 50,000 HUF on the training of each employee, and 50% spend between 50,000 and 300,000 HUF, and only 10.5% of them spend more than HUF 300,000 on employee training. No significant shift was observed during the two study periods.

## 4.1 Developing Financial Literacy Index

When developing the Corporate Financial Culture Index (henceforth: FLI), the primary goal is to measure the financial awareness of companies. The design of the corporate FLI also aims to refer to the exercise of planning, analysis and control functions, conscious liquidity management, awareness of short- and long-term strategic planning, widespread orientation, use of modern banking services, capital strength and indebtedness, and to manage financial risks. The indicator is developed in a standardized additive method, taking into account the variables below. Within the indices, all variables have the same load. After grouping the variables, seven sub-indices emerged, as follows (Table 3).

Table 3 demonstrates that by 2021, the financing index, the analysis, the external financial items index, the taxation index and the risk and insurance index increased significantly ($p < 0.05$); the financial management index remained unchanged, however, the mean of the design index decreased significantly in the study sample.

Table 3
Components of the Financial Literacy Index ant their change between 2019-2021

| **Kultúraindexek Culture indexes** | **Measured variable** | **2019** | | **2021** | | **p** |
|---|---|---|---|---|---|---|
| | | **average** | **deviation** | **average** | **deviation** | |
| Finance index | Borrowing<br>Liquidity management<br>Financial and capital structure<br>Use of internal financing instruments<br>Conscious design of capital structure | 1,48 | 1,37 | 1,71 | 1,65 | * |
| Planning index | Revenue and expenditure plan<br>Design premises and conditions<br>Written strategy<br>Short-term operational plan<br>Financial strategy<br>Financing strategy | 3,14 | 2,02 | 2,26 | 1,89 | *** |
| Analysis index | Review of the financial situation<br>Revenue structure analysis<br>Liquidity analysis<br>Analysis of the possibilities of obtaining application funds<br>Cost structure analysis<br>Profitability analysis<br>Plan- fact analysis<br>Asset analysis | 2,61 | 2,34 | 3,04 | 2,88 | * |
| External financial items index | Following the communication of the Hungarian National Bank<br>Monitoring macroeconomic processes<br>Monitoring the operation of the state and changes in economic policy<br>Use of counseling<br>Monitoring inflation and the central bank base rate | 3,46 | 1,68 | 4,24 | 1,93 | *** |
| Tax index | Search for tax optimization<br>Applying tax optimization<br>Considering the tax implications of financial decisions | 3,01 | 1,2 | 3,54 | 1,43 | ** |
| | Profitability<br>Efficiency | 5,55 | 3,07 | 5,59 | 3,07 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Financial management items index | Cashflow management | | | | | |
| | Regular controlling reports | | | | | |
| | Financial reserve | | | | | |
| | Investment | | | | | |
| | Cost management | | | | | |
| | Growth | | | | | |
| | Conscious financial, strategic management | | | | | |
| | Use of modern banking and financial services | | | | | |
| Risk and insurance index | Risk management | 3,01 | 2,02 | 3,34 | 2,63 | *** |
| | Acquisition and analysis of financial information | | | | | |
| | Credit insurance | | | | | |
| | Building insurance | | | | | |
| | Comprehensive insurance | | | | | |
| | Liability insurance | | | | | |
| | Property insurance | | | | | |
| | Equipment and shipping insurance | | | | | |
| | Other insurance | | | | | |

**: p<0,05; **: p<0,01; ***: p<0,001*

To aggregate the standardized versions of the individual financial culture indices, we used the exploratory factor analysis with the principal component method, Kaiser normalization, and varimax rotation over the entire database, combined. The most important performance indicators in the analysis correspond to the levels expected in the statistical methodology; the Kaiser-Meyer-Olkin Measure for Sampeling Adequacy (KMO) was 0.832, and Bartlett's test of Spheracity test was significant ($\chi2$ = 1154.371; p = 0.000;). After merging the seven individual indices, two factors emerged. These explain a total of 62.194% of the total variance explained by the seven measured variables. The rotated factor load of the combined factors on the dominant components is greater than 0.5 and is at least twice the value of the factor load on the other component. Based on all this, it can be concluded that the model fits well. Based on their content, the components can be named as follows: the first factor compresses variables related to an internally oriented financial culture, while the second comprises variables that are more externally oriented.

Table 4

Rotated factor matrix

| | Factors | |
|---|---|---|
| | Internal Financial Culture Index (IFLI) | Externally oriented financial culture index (EFLI) |
| Planning index | **0,832** | 0,108 |
| Analysis index | **0,825** | 0,185 |
| Financial management items index | **0,804** | 0,194 |
| Funding index | **0,736** | 0,173 |
| Taxation index | -0,052 | **0,825** |

| | | |
|---|---|---|
| External financial items index | 0,287 | **0,673** |
| Risk and insurance index | 0,229 | **0,581** |

**Bold**: variable fits on the certain component

## 4.2 Modelling the Relationships Between FLI and Trust, Environment and Training

All measured and aggregated variables are then available to generate the path model. Based on a priori information, the literature, and previous analyses, we hypothesize that perceptions of the business environment have a direct impact on financial culture and also indirectly through the mediative effects of the micro- and macro-environment. This mediative effect can be further extended through training, that is to say the business environment also affects the financial culture through training. The sub-calculations and causal relationships of the model developed as shown in the following figure.

Figure 2 shows the standardized regression coefficients and their significance levels in the arrows indicating the relationship between the variables. The variables explained (if the sub-model is significant) show the coefficient of determination and the significance level of the fit of the model. The coefficient refers to the extent to which the explanatory variables explain the variance of the outcome variable. The fit of the model is significant if $p < 0.05$.

The following relationships can be observed in the model. (1) The internal financial culture index is directly explained by the amount of training provided and the amount spent on it, as well as the two types of environmental trust. However, the latter two are in the opposite direction, i.e., if the trust is high, then the internal financial culture is low, and vice versa ($p = 0.000$). From all this, it can be concluded that trust is more important than the use of conscious financial instruments, as in many cases decision making based on tradition is the norm, rather than a financially sound and well-founded decision making mechanism and all this can be risky. (2) Indeed, the external financial culture index is directly influenced by these three factors (perception of the business environment, macro-environmental trust, micro-environmental trust), but they are all straightforward, i.e.: the better a company's business environment is the higher its external financial culture is and vice versa. (3) The assessment of the business environment does not directly influence the development of the financial culture, but only indirectly through training. (4) The amount spent on the training directly explains, the financial culture, primarily the internal one, but also strongly explains the external connections.

It can be seen from the model that the significance of the path models were the same in the two study databases, as well as the direction of the relationships (indication of the parameters), small changes in the values of the parameters and in the explanatory power of the sub-models (coefficient of determination) emerge, but the nature of the model has not changed, which also supports its reliability.

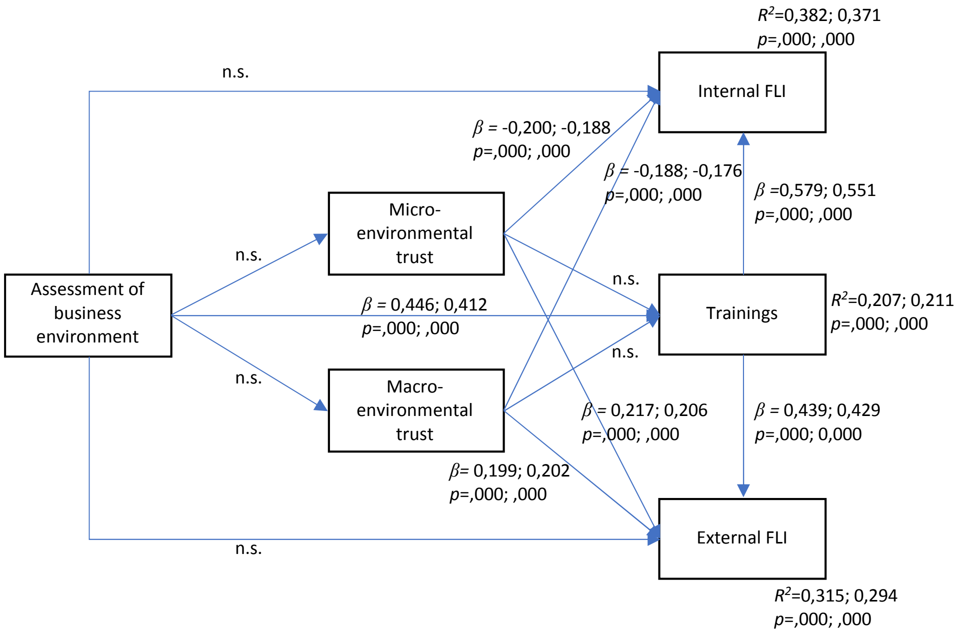



Diagram 2

Conceptual structure of a causal model

n.s.: not significant; *: p<0,05; **: p<0,01; ***: p<0,001

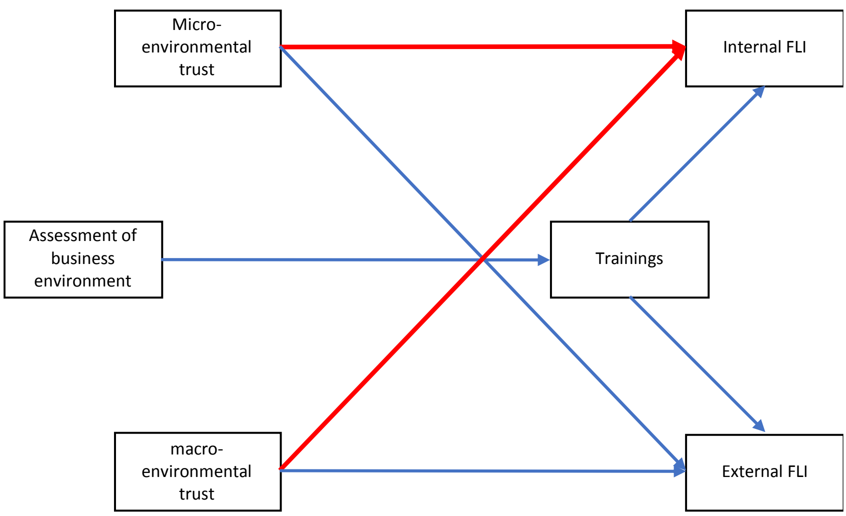



Diagram 3

Significant relationships in financial path modeling

Thus, it is clear from the partial model that there is no direct causal relationship between the variables of the business environment and the financial culture (the dependencies represented in the model refer to this through the partial model). However, if we consider in-company training as a mediative variable, it can be seen that the perception of the environment has a moderately strong and significant effect on the amount spent on training, which clearly develops the financial culture, both externally and internally. However, in the case of trust, this mediative effect does not exist: the trust directly affects the financial culture, without being influenced by the training.

Considering the above results, the following theses can be formulated. (Thesis 1) Companies with a high internal financial culture have low micro- and macro-environmental trust. Environmental trust is inversely proportional to an internally oriented financial culture and directly proportional to an externally oriented financial culture. (Thesis 2) The business environment does not directly affect the financial awareness of companies. However, a favorable business environment supports the implementation of internal and / or external training, which in turn implements a higher level of corporate financial culture, that is, it improves financial awareness.

## Conclusions

Researching the SMEs' financial performance and connecting it to the business environment is an extremely trending topic not only among scientific researchers, but also among business consultants, as well as practicing professionals. This research attempted to answer the question what the relationships between corporate financial literacy and business environmental trust is, and the assessment of the environment. We took a 511-element representative sample from the Hungarian SME sector in 2019 and repeated the same sampling in 2021. A path model has been developed to answer our research question and check the hypothesis. With this model we could find significant direct and moderating effects of environmental factors on financial literacy between 2019 and 2021. Based on this database we performed scale transformations and aggregations using SPSS. We found that the SMEs' financing index, analysis index, external financial index, taxation index and risk and insurance index have been significantly increased showing that during the COVID-19 pandemic Hungarian SMEs have a deepening focus on external financial environmental factors, while the planning index is suffering a significant decrease under the COIVID-19 pandemic suggesting that financial planning has become complicated, and markets are getting hard to forecast. We also found significant links between the SMEs' assessment of external environment, business trust and financial literacy: the lower the trust (either macro- or micro-environmental), the higher the internal financial literacy is. Nevertheless, corporate trainings have a significant moderating effect between environmental assessment and financial literacy. These casual relationships have not changed through the COVID-19 pandemic.

## References


[1] Pál, Zs. (szerk.) (2017): A pénzügyi kultúra aktuális kérdései, különös tekintettel a banki szolgáltatásokra. A közgazdaságtani-módszertani képzés fejlesztéséért Alapítvány Produkció: Economix Kft.Miskolc, p. 121, 5. p.

[2] Béres, D.; Botos, K. (2013): Financial Literacy and Macro-economics. In.: Pénzügyi Szemle. https://www.penzugyiszemle.hu/upload/pdf/penzugyi_szemle_angol/volume_LVII_2012_3/a_298_312_beres_huzdik.pdf

[3] Dembinski, P. H. (2018): Etika és felelősség a pénzügyi életben. Budapest, KETEG Oikonomia Kutató Intézet Alapítvány. 55-72. p.

[4] Klapper, L., Lusardi, A.; Panos, G.A. (2012): Financial Literacy and the Financial Crisis. Netspar Discussion Papers DP 03/2012-007. Word Bank: Washington, USA. 1-54. http://hdl.handle.net/10986/3266 (Accessed on: 05 August 2020)

[5] Győrffy, D. (2017): Bizalom a pénzügyekben. Válság és válságkezelés az Európai Unióba. Typotex Kiadó. Budapest. pp. 259, 15-16. p.

[6] Mills, K.,McCarthy, B. (2014): The state of small business lending: Credit access during the recovery and how technology may change the game. Harvard Business School General Management Unit Working Paper, (15-004) https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2470523 (Accessed on: 05 August 2020)

[7] Grifoni, A.; Messy, F. A. (2012): Current status of national strategies for financial education: A comparative analysis and relevant practices. OECD working paper. OECD: Paris, France. https://doi.org/10.1787/20797117. http://www.oecd.org/daf/fin/financial-education/TrustFund2013_OECD_INFE_Current_Status_of_National_Strategies_for_Fin_Ed.pdf (Accessed on: 05 August 2020)

[8] Csiszárik-Kocsir Ágnes – Garai-Fodor Mónika (2018): Miért fontos a pénzügyi ismeretek oktatása a Z generáció véleménye alapján? Polgári Szemle, 14 évf., 1-3. sz., 2018, 107-119., DOI: 10.24307/psz.2018.0809

[9] Asenge, E. L., Anyebe, S. O., & Nomhwange, S. T. (2016): Financial Literacy and New Venture Performance in Developing Economies. International Journal of Latest Research in Humanities and Social Science, 1(3):1-5. http://ijlrhss.com/vol1-iss3.html (Accessed on: 05 August 2020)

[10] Eniola, A. A., & Entebang, H. (2017): SME managers and financial literacy. Global Business Review, 18(3):559-76. https://doi.org/10.1177/0972150917692063

[11] Zabolotnyy, S., & Wasilewski, M. (2019): The concept of financial sustainability measurement: A case of food companies from Northern

Europe. Sustainability, 11(18, 5139):1-16. https://doi.org/10.3390/su11185139.

[12] Ye, J., & Kulathunga, K. (2019): How does financial literacy promote sustainability in SMEs? A developing country perspective. Sustainability, 11(10, 2990):1-21. https://doi.org/10.3390/su11102990

[13] Tóth, R. (2017): A logisztikai vállalatok versenyképességének elemzése, valamint a pénzügyi kultúrának értelmezése ezen ágazatban. Logisztikai Trendek és Legjobb Gyakorlatok, 3(1):1-5. https://doi.org/10.21405/logtrend.2016.2.2.35

[14] Bárczi, J., & Zéman, Z. (2015): A pénzügyi kultúra és annak anomáliái. Polgári Szemle: Gazdasági és társadalmi folyóirat, 11(1-3):101-08. https://polgariszemle.hu/archivum/93-2015-junius-11-evfolyam-1-3-szam/gazdasagpolitika/651-a-penzuegyi-kultura-es-annak-anomaliai

[15] Heleta, M. (2014): Financial literacy as a factor in reducing entrepreneurial risk. FINIZ 2014-The Role of Financial Reporting in Corporate Governance 2014:112-14. https://doi.org/10.15308/finiz-2014-112-114

[16] OECD (2005): Improving Financial Literacy. Organisation for Economic Co-operation and Development. https://www.oecd.org/finance/financialeducation/improvingfinancialliteracyanalysisofissuesandpolicies.htm (Accessed on: 5 August 2020)

[17] Atkinson, A., & Messy, F. (2012): „A pénzügyi kultúra mérése: Az OECD/Nemzetközi Pénzügyi Képzési Hálózata (INFE) kísérleti kutatásának eredményei". OECD Pénzügyi, Biztosítási és Magán-nyugdíjpénztári Műhelytanulmányok, 15:1-73. https://doi.org/10.1787/5k9csfs90fr4-en

[18] Remund, D. L. (2010): Financial literacy explicated: The case for a clearer definition in an increasingly complex economy. Journal of Consumer Affairs, 44(2):276-95. https://doi.org/10.1111/j.1745-6606.2010.01169.x

[19] Prete, A. L. (2013): Economic literacy, inequality, and financial development. Economics Letters, 118(1):74-76. https://doi.org/10.1016/j.econlet.2012.09.029

[20] Bire, A. R.; Sauw, H. M. (2019): The effect of financial literacy towards financial inclusion through financial training. International Journal of Social Sciences and Humanities, 3(1):186-92. p. https://doi.org/10.29332/ijssh.v3n1.280

[21] Bartlett, S. A.; Chandler, R. A. (1997): The corporate report and the private shareholder: Lee and Tweedie twenty years on. The British Accounting Review 1997. 29(3). 245-61. p. https://doi.org/10.1006/bare.1996.0044

[22] Nunoo, J.; Andoh, F. K. (2012): Sustaining small and medium enterprises through financial services utilization: Does financial literacy matter?

Agricultural & Applied Economics Association's 2012 AAEA Annual Meeting, Seattle, Washington

[23] Mak, V.; Braspenning, J. (2012): Errare humanum est: Financial literacy in European consumer credit law. Journal of Consumer Policy, 35(3) 307-32. p. https://doi.org/10.1007/s10603-012-9198-5

[24] Sugawara, N.; Zalduendo, J. (2013): Credit-less recoveries: neither a rare nor an insurmountable challenge. The World Bank: 2013.1813-9450

[25] Marriott, D. N.; Mellett, H. J. (1995): The level of financial skills of National Health Service managers, Financial Accountability & Management, 11(3), 271-282. p.

[26] Dahmen, P.; Rodríguez E. (2014): Financial Literacy and the Success of Small Businesses: An Observation from a Small Business Development Center. Numeracy: Advancing Education in Quantitative Literacy, 7(1):1-14. p. http://dx.doi.org/10.5038/1936-4660.7.1.3

[27] Putri, W.W.; Hamidi, M. (2019): Pengaruh literasi keuangan, efikasi keuangan, dan faktor demografi terhadap pengambilan keputusan investasi (studi kasus pada mahasiswa magister manajemen fakultas ekonomi universitas andalas padang). Jurnal Ilmiah Mahasiswa Ekonomi Manajemen, 4(1):210-24. p. http://www.jim.unsyiah.ac.id/EKM/article/view/10703 (Accessed on: 5 August 2020)

[28] Umogbaimonica, E.; Agwa, T. R.; Asenge, L. E. (2018): Financial Literacy And Performance Of Small And Medium Scale Enterprises In Benue State. Business and Management Research, 2(4): 65-79. p. https://ijebmr.com/uploads/pdf/archivepdf/2020/IJEBMR_02_230.pdf

[29] Lusardi, A.; Mitchell, O. S. (2014): The economic importance of financial literacy: Theory and evidence. Journal of Economic Literature, 52(1):5-44. p. https://doi.org/10.1257/jel.52.1.5

[30] Delić, A.; Peterka, S. O.; Kurtovic, I. (2016): Is there a relationship between financial literacy, capital structure and competitiveness of SMEs? Econviews-Review of Contemporary Business. Entrepreneurship and Economic Issues, 29(1):37-50. p. https://hrcak.srce.hr/ojs/index.php/ekonomski-vjesnik/article/view/4130

[31] Kovács, L. (2017): A pénzügyi kultúra fejlesztése, mint önérdek. In. A pénzügyi kultúra aktuális kérdései, különös tekintettel a banki szolgáltatásokra. 7. p. https://penz7.hu/uploads/images/ckfinder/files/tanulmanykotetfinal.pdf

[32] Tóth, R. (2016): A magyarországi kis-és közepes vállalkozások regionális különbségei, In: Csath Magdolna (szerk.): Regionális versenyképességi tanulmányok. 319 p. Budapest: NKE Szolgáltató Nonprofit Kft, 2016. 143-179. p. ISBN:978-963 439001 5

[33] Stiglitz, J. E.; Greenwald, B. C. (2014): Creating a Learning Society. A New Approach to Growth Development and Social Progress. Columbia University, New York

[34] Blanchard, O.; Summers, L. H. (2019): A stabilizációs poltika újragondolűsa: Fejlődés vagy forradalom. In: Fejlődés vagy Forradalom, a makrogazdasági politika újragondolása a Nagy Recessziót követően. Pallas Athéné Könyvkiadó, Budapest. 32-47. p.

[35] Kahn, A. (2016): Central Bank Governance and the Role of Nonfinancial Risk Management. IMF Working Paper. February 2016. https://doi.org/10.5089/9781498376051.001

[36] Csiszárik-Kocsir, Á. (2017): Crisis and Financing - or the Practical Financing Decisions of Hungarian Small and Medium-sized Enterprises. Polgári Szemle: Gazdasági És Társadalmi Folyóirat 13 : Special Issue pp. 199-215. p.

[37] Csiszárik-Kocsir, Á. (2021): Customer Preferences in Bank Selection before and after the Pandemic in the Light of Financial Culture and Awareness. Acta Polytechnica Hungarica 18 : 11 pp. 151-169. p.

[38] Csiszárik-Kocsir, Á.; Garai-Fodor, M.; Varga, J. (2021): What has Become Important during the Pandemic? – Reassessing Preferences and Purchasing Habits as an Aftermath of the Coronavirus Epidemic through the Eyes of Different Generations. Acta Polytechnica Hungarica 18 : 49-74. p.

[39] Csiszárik-Kocsir, Á.; Varga, J.; Garai-Fodor M. (2021): A múlt és a jelen pénzügyi válságainak ismerete a pénzügyi oktatás függvényében. Pénzügyi Szemle 66 . 215-234. p.

[40] Avlijas, G.; Avlijas, R.; Heleta, M. (2014): Financial Literacy as a Factor in ReducingEnterpreneurial Risk. Finiz 2014 – Enterpreneurship, Singidunum University InternationalScientific Conference, 2014, 112-114. p. doi: 10.15308/finiz-2014-112-114

[41] Purnamawati, I. G. A.; Yuniarta, G. A. (2018): Pelatihan dan Pendampingan Penyusunan Laporan Arus Kas untuk Pengelola Koperasi di Kecamatan Buleleng. Proceeding of Community Development, 1:189-197. p. https://doi.org/10.30874/comdev.2017.25

[42] Plakalović, N. (2015): Financial literacy of smes managers. Managing Intellectual Capital and Innovation for Sustainable and Inclusive Society, 409-416. p. http://www.toknowpress.net/ISBN/978-961-6914-13-0/papers/ML15-086.pdf (Accessed on: 05 August 2020)

[43] Plakalović, N.; Mekinjićb, B., Merkoc, F.; Likac, D. (2019): Financial literacy and conditions for its improvement. Journal of Faculty of Economics Brcko, 13(1):1-13. p. https://doi.org/10.7251/ZREFB1913001P

[44] Füstös, L.; Kovács, E.; Meszéna, G.; Simonné Mosolygó, N. (2004): *Alakfelismerés. Sokváltozós statisztikai módszerek*. Budapest: Új Mandátum Könyvkiadó

[45] Székelyi, M.; Barna, I. (2004): *Túlélőkészlet az SPSS-hez*. Budapest: Typotex

[46] Draper, N. R.; Smith, H. (1981): *Applied Regression Analysis* (Second edi). New York, USA: John Wiley

[47] Mosteller, F.; Tukey, J. W. (1977): *Data Analisys and Regression*. Reading, Massachusetts: Addison-Wesley

[48] Freedman, D., Pisani, R.; Purves, R. (2005): *Statisztika*. Budapest: Typotex

[49] Maddala, G. S. (2004): *Bevezetés az ökonometriába*. Budapest: Nemzeti Tankönyvkiadó

[50] Tabachnick, B. G.; Fidell, L. S. (2007): *Using multivariate statistics* (5th ed.). Boston, MA.: Allyn and Bacon

[51] Matolcsy, Gy. (2020): Quo vadis Hungaria? – Facing a New World Civic Review, Vol. 16, Special Issue, 2020, 9-31. p., DOI: 10.24307/psz.2020.1202

[52] Domokos, L. (2020): Assisting the Sustainability of a Well-managed State in Times of Pandemic Crisis. Civic Re-view, Vol. 16, Spe-cial Issue, 2020, 32-46. p.