DETERMINANTS OF FINANCIAL LITERACY: EXPECTATIONS AND REAL BEHAVIOUR OF THE CZECH BUSINESSES

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Abstract:

Financial literacy and typical reaction to instantly solve financial planning problems are closely linked together. Here, we properly explored financial literacy in the form of entrepreneurial expectations and real behaviour. The main goal of this paper is to recognise current financial behaviour based on a comparison of a set of expectations (presented by a mixture of knowledge of financial ratios and processes) in the area of financial planning, named as financial literacy of entrepreneurs. The results are based on a survey of 238 respondents in the Czech Republic. Those findings are presented in the form of archetypes, based on cluster analysis. Moreover, the study confirmed a negative relationship related to self-financing activities and a significant role of the cash-flow statement. Based on these results, implications for further research on this topic, as well as implications for practitioners and educators in business economics are mentioned.

Key words:

Archetypes, cluster analysis, financial literacy, knowledge, SME

JEL: L26, M21, M13

1   Introduction: Financial literacy and financial planning

Successful entrepreneurs mirror modern present-day developments, which might be extra dynamic, mainly within the SME sector. To be able to survive those changes, they need using their competencies actively. The appropriate level of these specific competencies can influence a business surroundings evaluation by operating the personal level of satisfaction. All characteristics typically have long-term consequences and that they accept closer links to organisational performance inside current enterprise surroundings. Active support of entrepreneurial competencies goes hand in hand with business success. This economic situation is closely connected with the financial environment that entrepreneurs face today has become more risky, just in one key generation (Boshara et al., 2010). Inline to that it naturally increases a specific need for financial literacy and financial education (Hilgert et al., 2003; Cordray, 2013).

How to precisely define properly financial literacy? In common use, financial literacy is naturally connected with cognitive skills, and it is a part of someone practical knowledge. Financial literacy could be measured by per cent correct on knowledge tests in financial questions (Van Rooj et al., 2011). In line with this Remund (2010) mentioned that financial literacy is based on a degree of understanding key financial concepts a complex process to be capable to manage finance through appropriate short term decision-making tools and also be able to implement long-range financial planning within changing

economic conditions. Defining and appropriately measuring financial literacy is essential to examine the educational impact as well as potential barriers to effective financial choice to support entrepreneurial education (Huston, 2010). As summarised in Table 1 below, those modern definitions could be divided into two independent groups – based on decision skills growth and financial skills development.

Table 1: A comparison of Financial literacy definitions

Source	Definition	Based on…
Noctor et al., 1992.	Financial literacy is the ability to make informed judgments and to take effective decisions regarding the use and management of money.	Decision-making skills
Vitt et al., 2000.	Personal financial literacy is the ability to read, analyse, manage and communicate about the personal financial conditions that affect material well-being. It includes the ability to discern financial choices.	Decision-making skills
Hader, Sood, & Fox 2013.	A need to develop skills to plan, to be active, and willingness to take investment risks more than „collect" a financial knowledge.	Decision-making skills
Kim, 2001.	Financial literacy is a basic knowledge that people need in order to survive in a modern society.	Knowledge
Servon & Kaestner, 2008.	Financial literacy refers to a person's ability to understand and make use of financial concepts.	Knowledge
Bowen, 2002.	Financial knowledge is defined as understanding key financial terms and concepts needed to function daily in American society.	Knowledge
Courchane & Zorn, 2005.	Consumer literacy, defined as self-assessed financial knowledge or objective knowledge.	Knowledge
Fernandes et al., 2014.	Financial behaviour is directly affected by financial literacy. They didn't cover the experience of people, which could help them in their financial decisions.	Knowledge
Lusardi & Mitchell, 2007, 2014.	Financial literacy have a relationship to planning and from planning to financial behaviour.	Knowledge

Source: Author´s comparison based on Huston, 2010, literature review.

As being illustrated, most definitions are based on knowledge transfer, but it may be insufficient for real entrepreneurial practice and entrepreneurial success. This problem would also be supported with a broader definition of entrepreneurial competencies as a "roof" of literacy for entrepreneurial success in a theoretical way. The definition of entrepreneurial competencies and the stress on the development of entrepreneurial literacy can be found in the "Green Paper on Entrepreneurship" (EU Commission, 2003). This agenda was updated by the "Small Business Act", published in 2008 when eight basic competencies were identified in focus on knowledge economy building. The "New skills agenda for Europe 2020" is just going to be implemented in entrepreneurial education. The origin of the competence model is the EntreComp Competency Model (Bacigalupo et al., 2016), where the main stress is placed on the resources for the business and their optimisation. However, corporate competencies represent the ability of an enterprise to utilise its resources, usually in combination with organisational processes for the desired purpose. They are typically based on the creation, sharing and exchange of information between people. Enterprise resources establish the foundation of enterprise

competencies, and competencies represent a core component of competitive advantage (Fiske et al., 2018; Goleman, 2000). Those competencies actively support the financial literacy of small businesses. When an entrepreneur is financially literate, they may predict its behaviour, and they could increase their financial well-being in the form of financial planning.

Financial planning is closely connected with many areas such as planning, calculating and reporting to prepare entrepreneurs for a prospective future, especially in the area of financial management and resource management within appropriate business education (Pittaway & Cope, 2016; Fiet, 2001). In line with that, a company development, when the reinvestment process plays an important part in the decision-making process in financial management, not only small businesses (Zhou, 2017). According to those small businesses prefer their own capital, and their behaviour depends on previous experience (Wellalage & Reddy, 2020).

However, there has been little discussion on the relationship between entrepreneurial financial literacies. Previous studies have been oriented on personal knowledge and preferences in investment or financial planning and budgeting mostly in private life, but not with the final effect on entrepreneurial decision-making. This area was evaluated as the research gap within current studies. Following that, throughout the paper, we will implement the term financial literacy to refer to "entrepreneurial ability to decide about the proper use of financial resources generated from entrepreneurial activity, which is based on previous experience". This approach represents include a mixture of existing definitions, especially Hader, Sood, & Fox (2013) and Servon & Kaestner (2008). Therefore, the research question has arisen: What factors would positively affect entrepreneurial financial literacy? In a line with that key question, it is essential to conduct a qualitative survey to provide a comprehensive solution to enrich the existing literature and practice.

The main goal of this paper is to recognise current economic behaviour of business owners based on comparison of a comprehensive set of expectations (presented by a unique mixture of necessary knowledge of financial ratios and productive processes) and the evaluation of current behaviour in the area of financial planning, named as financial literacy of entrepreneurs. In that qualitative study, we examine this relationship within financial literacy point of view, which was defined and discussed in the Introduction. Most of the prior studies related to financial literacy, mentioned in Table 1 was focused on decision-making skills growth, not on financial skills development. Therein in common was the reason why we undertook primary research to expand knowledge to existing studies, finally to add inspiration to the Czech business educators. The following section presents the archetypes of "typical" entrepreneurs with their financial literacy knowledge. Finally, the conclusion and possible implications follow the academic discussion of the practical results.

2   Methods

Methodology and research methods. Research has provided data on entrepreneurs' general knowledge of financial ratios and possible ways, how to measure it in financial decisions to be able to answer the research question. The data were evaluated in terms of sentiment, either mainly positive or predominantly negative. This key part covered their expectations about financial literacy before start-up (financial ratios and other knowledge, a coding sheet are in Appendix 1). The fundamental questions mixed the approach of Vitt et al. (2000) and Servon & Kaestner (2008) were used. To be able to evaluate literacy questions (based on EntreComp model of Bacigalupo et al., 2016), we in the first place coded answers from the interview into a numerical value. The data that was obtained was evaluated in the form of notes from the interviews in a combination of the coding sheet. The importance of the contributing factors that people need to start-up or the factors influencing real financial behaviour for each respondent has been classified in the order they were named by them. All behavioural factors were evaluated by selected respondents on the Likert scale 1 to 5 (where 1 – not connected with my business and me, strongly disagree – potential respondent said: "I don't expect that..." or "I am not sure

about...”; 5 – I am dealing with that factor in my everyday life, very important, strongly agree, mentioned at the first place).

The results of the two examined dimensions supporting the primary goal of this paper, when:
- reasonable expectations present a complex mixture of practical knowledge (starting point of financial literacy, a fundamental skill needed for decision making) – process knowledge, financial ratios,
- real behaviour, which was typically described by entrepreneurs.

Furthermore, data on the creation of an investment in the surveyed enterprises were obtained from the competent manager's perspective. Essential data on managers were also obtained. These descriptive and control variables were determined gender, age, education, and length of business experience. A possible connection between those independent variables was tested by canonical Spearman correlation analysis on a p-value less than 0.05. Finally, a K-means clustering was used as a technique for quantitative data cluster analysis. The concept is based on spherical clusters that are separable so that the mean converges towards the cluster centre (Hartigan & Wong, 1979) to be able to divide respondents into groups to create their “typical” groups called as “archetypes” in this paper.

Data collection. The case study presentation introduces complete field research conducted in the form of a standardized questionnaire prepared for semi-structured interviews. Data were collected from the second half of 2018 to March 2019 by a combination of an online form and a personal interview of the team members. Of all the companies in the Czech Republic, we were interested in companies fulfilling the following conditions (1 ‰ quota selection by one region within the Czech Republic):

- Limitation on the legal form (only Sole Proprietors and Limited Liability Companies were asked to join the research because of their number in the entrepreneurial population.
- Limitation on minimum turnover (to eliminate inactive enterprises according to Czech Statistical Office evaluation, when CZK 1 is set as a minimum).
- Limitation an insufficient number of employees. The maximum number of employees being 249. This is typical because active managers are employed in large enterprises and therefore they may not have experience in setting up a private enterprise.

It was necessary to randomly select enterprises meeting the previous necessities from each region (the number of enterprises selected in each region is indicated in the last column.). A total of 1,136 enterprises was selected and are reported in Table 2 below.

Table 2: Number of Enterprises in the Czech Republic by Region

Region (NUTS III)	A percentage from the Czech Republic	Number of enterprises	Number of enterprises in the sample
Prague	9.1	239,725	240
Central Bohemia	5.45	143,687	144
South Bohemia	2.52	66,351	66
Plzeň	2.1	55,307	55
Karlovy Vary	1	26,283	26
Ústí n. L.	2.37	62,524	63
Liberec	1.67	43,976	44
Hradec Králové	2.18	57,316	57
Pardubice	1.88	49,481	49
Vysočina	1.82	47,845	48
South Moravia	4.94	130,248	130
Olomouc	2.11	55,539	56
Zlín	2.23	58,816	59
Moravian-Silesian	3.75	98,742	99
Total	43.12	1,135,840	1,136

Sources: Ministry of Industry and Trade (2018), Business statistics, available at:
https://www.mpo.cz/cz/podnikani/zivnostenske-podnikani/statisticke-udaje-o-podnikatelich/ (accessed 4 October 2018)

Data sample description. A total of 238 respondents had replied to the questionnaire as of August 28, 2019. Data were collected using a semi-structured interview. The organized interviews were carried out face-to-face or by telephone when 66% of semi-structured interviews were conducted face-to-face, and 34% of semi-structured interviews were conducted by telephone. A total of 1,136 entrepreneurs was addressed, and 238 entrepreneurs attended the interviews. Overall, the interviews lasted approximately 175 hours and 30 minutes, when 78.5% of answers to questions about numbers (qualitative evaluation, descriptive variables) were obtained directly from entrepreneurs, and 21.5 % of responses were taken directly from the enterprise records. Identification data of independent managers were evaluated based on the inclusion of the data categories based on gender, education and business experience. (Table 3).

Table 3: Data sample description

Descriptive dimension	Categories				
Business Experience	1 to 3 years	4 to 10 years	11 to 20 years	20 +	Total
	15	57	62	104	238
Education	High (secondary) School	Vocational School	University	-	Total
	94	47	97	-	238
Age	18 to 40 years	41 to 65 years	65 +	-	Total
	197	29	12	-	238

Source: Own research data

After processing the answers received from the respondents, it was found that there were 163 men and 75 women in the selected sample. Those selected respondents were from 14% sole proprietors, 48% in size of 1 to 10 employees, 19 % between 11 to 50 employees, 11% in size 51 to 249, 8% in size

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250+ staff member. The most significant group of respondents in common was in the age of 41-55 years (men 52.38% and women 59.74%) with secondary education in 40.48% cases.

3   Paper results

In the initial step of our study, we combined two sets of independent variables to compare expected and real behaviour in financial literacy and we examined relationships between them using Spearman correlation analysis (Table 4).Key elements, named in the first column represents circumstances of financial literacy (planned by entrepreneur, mostly practical knowledge) and factors mentioned in the first row are from the list of methods really used in their financial decision-making, when significant relationships are highlighted by asterisk mark.

Table 4: A conflict between expectations and behaviour

Expectations Before I start (literacy)	Behaviour I am doing/ I have…						
	Calculations	Financial goals	Observing financial reports	I have a limit for a maximum lost	Planning investments	Basic knowledge about business economics	I prefer to use own capital
Profit (EAT)	0.030	0.125	0.230	0.242	0.162	0.074	-0.035
Cost	0.220	0.133	0.238	0.236	0.126	0.143	-0.128
Profit (EBIT)	0.136	0.057	0.214	0.225	0.127	0.200	-0.067
Cash-flow	0.123	0.237*	0.181	0.267*	0.256	0.235*	-0.090
Profitability	0.117	0.166	0.161	0.185	0.144	0.188	-0.081
Process Management	0.140	0.100	0.216	0.098	0.137	0.316*	-0.096
Business Agenda	0.044	0.005	0.159	-0.021	0.061	0.179	-0.024

Source: Own research data, *significant relationship p-value < 0.05

As modern educators, we were interested in the influence of education on financial literacy (typically represented by factor business economics in practical use). There was found a moderately strong tie between process management knowledge (0.316) and cash-flow statement knowledge (0.235). Unfortunately, this business economics education is not supporting expectations on how to deal with the Business Agenda in general (0.179). Logically, knowledge of cash flow statement knowledge has a positive influence on a limit of a maximum loss (0.267). Surprisingly, we did not find a relationship between a business agenda, (mostly interpreted as a plan) and the practical use of financial goals (0.005). Opposite to that, selected respondents traditionally prefer a practical knowledge of cash-flow to set up company business goals (0.237). On other hand, we found that differences between the profit" word meaning. Hence, it seems that entrepreneurs have some kind of financial literacy because they can diversify the differences between those two ratios. The most negative sentiment was found in the column comparing the use of own capital to other factors.

However, a statistical relationship between "business agenda" and planning for the maximum loss is also negative (-0.021), when is sufficiently known that projection of profits and losses is a part of a business plan.

Secondly, it seems that competencies and knowledge are more used in case of financial problems (Dejo-Oricain & Ramírez-Alesón, 2009, Šebestová et al., 2018). There is frequently a problem, especially in SMEs, as they typically have a terrible business and economic competencies to adequately reflect their current cycle and correct business problems effectively. To be able to answer the initial research question would be necessary to describe the results in detail. All collected data have to be sorted into similar groups, based on results of "coded" answers. The results represent "archetypes", which represent "common" behaviour. As a result of this analysis, we obtained four clusters – respondent archetypes (table 5). All variables were tested if they are useful variables for the cluster when gender was unfound as statistically significant (F =0.892; Sig. =0.469).

Those four clusters (archetypes of entrepreneurs) differ in unimportant details, especially how complex is financial literacy and financial management in practice. The "label" of archetypes is based on the most frequent respondent's comments in that group and the archetype label represents the main focus of their financial literacy and the combination of their knowledge and decision making.

Table 5: Cluster Analysis

	Own capital oriented N= 86	Process-oriented N=89	Maximum lost oriented N=40	I know my financial limits N=23
Descriptive variables				
Age	18 to 40 years	18 to 40 years	18 to 40 years	41-55 years
Education	Vocational School	University	University	High (secondary) School
Business practice	11 to 20 years	4 to 10 years	1 to 3 years	4 to 10 years
Expectations (Knowledge)				
	Mean Value	Mean Value	Mean Value	Mean Value
Profit (EAT)	1.512	1.629	2.125	4.000
Cost	1.186	1.292	1.375	2.500
Profit (EBIT)	1.453	1.955	2.025	3.500
Cash-flow	1.872	1.607	2.250	2.500
Profitability	1.663	1.449	2.350	2.500
Business Agenda	1.419	2.169	1.775	3.500
Process Management	1.628	2.528	2.550	3.500
Real behaviour (Decision-making)				
Financial goals	2.093	1.596	1.975	3.000
Observing financial reports	1.337	1.202	1.300	3.500
I have a limit for a maximum lost	2.407	2.416	3.875	4.500
Planning investments	2.372	1.618	1.925	3.750
I prefer to use own capital	3.070	1.944	3.025	2.250

Source: Own research data, when mean value was based on Likert scale: 1.Strongly disagree, 2.Disagree, 3.Don't know, 4.Agree, 5.Strongly agree.

The first archetype was named "Own capital oriented" (N= 86) when the age of entrepreneurs represents nearly forty years, in reality, based on Likert scale evaluation. They prefer secure, own finance in their business. As reported, they are mostly oriented on practical entrepreneurial activity than on financial planning. Their common motto from interviews is "I'll buy it until I have the money." The second archetype we called "Process oriented" (N=89). Those entrepreneurs possess deep knowledge about the process in business, based on their more outstanding education. But still, they do not reflect a specific need to properly take care of financial planning in their enterprise, because their business activity is relatively young. The third group we named as "Maximum lost oriented" (N=40), those entrepreneurs care about their budget and naturally prefer their own resources for financing. They are mostly in the successful start-up of their business activity, so they mostly follow a financial plan from their start-up documents. The last archetype, maybe the most mature from them, we called "I recognise my financial limits" (N=23) because it illustrates the complex personality of entrepreneurs. We could see orientation on profit in the first place (average Likert scale mark 4.000) and this financial goal is supported by their behaviour like planning investments (average Likert scale mark 3.750) and having a limit for the maximum lost (average Likert scale mark 4.500).

4   Discussion and Conclusion

Like education, financial education and financial literacy could decline over time. Relatively similar studies that objectively measure financial literacy typically find deeper associations with financial behaviour and financial education (Fernandes et al., 2014), which was unconfirmed in our study when correlation coefficients were so weak. Those authors interpreted their results by financial behaviour which is directly affected by financial literacy. They did not refer to the experience of people, which could support them in their financial decisions. Other papers (Lusardi & Mitchell, 2014) also confirmed a causal link from financial literacy to planning and from planning to financial behaviour.

It seems that according to mentioned studies and our results a future entrepreneurial education should teach soft skills like tendency to plan, necessary confidence to be proactive, and willingness to accept investment risks more than „collect" a financial knowledge (Hader, Sood, & Fox 2013). It is expanding discussion for the professionalization of degree study programmes to be more practical, especially in the area of entrepreneurship and business economics.

To conclude this study, the entrepreneurs are affected predominantly by specific hard expectations and knowledge than experience. Main results of the study have shown that the current behaviour of entrepreneurs is mostly opposite to their expectations, and the level of development of competencies is very difficult to measure. In contrast to the theoretical background, business organisations need to take care of their financial literacy to be able to support their decision-making skills to avoid financial literacy traps, which are important to business survival.

Those Archetypes has shown a significance of competencies in the area of financial literacy during business education and the complex life cycle of a profitable business. It takes time to reach, mostly ideal combination in our case, to be in archetype "I know my financial limits." This archetype represents the optimal combination of knowledge and proper use of financial literacy. This empirical observation expands on the findings of Wellalage & Reddy (2020), who used just secondary data and Generalised Least Square regression model to describe determinants of profit reinvestments and financial management in SMEs in small countries. Business owners, in addition, do not demonstrate a deeper ability to focus on a particular type of business behaviour or expectations in the future.

We also deliver unexpected findings on ties between expectations and current behaviour that could help to develop other steps to create competency models which will cover more relevant areas. When the same methodology is utilised, the knowledge about business behaviour in unstable conditions would be replicable. This case study contains several limitations. The research results are also influenced by the small research sample that does not have a complete information value given the number of small-scale and medium-sized enterprises in the market. Only 238 selected respondents were discussed for

research purposes. However, this research only introduces further research in this area. In the key area of manager age, research was limited by large differences in the sufficient number of selected respondents in each predetermined age group.

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Appendix 1
A coding sheet from an interview (an extract)

Likert scale:
1. **Strongly disagree**
2. **Disagree**
3. **Don't know**
4. **Agree**
5. **Strongly agree**

1. **Evaluate, how those factors would affect motivation to start-up SME**

Statement	strongly disagree (1)	disagree (2)	don't know (3)	agree (4)	Strongly agree (5)
Financial stability of the family	◯	◯	◯	◯	◯
Self-employed family members	◯	◯	◯	◯	◯
Friends who have own business	◯	◯	◯	◯	◯
Education	◯	◯	◯	◯	◯
The desire for freedom and success	◯	◯	◯	◯	◯
Social background from which I came	◯	◯	◯	◯	◯
Personal attitudes to life (working longer, being reliable, ...)	◯	◯	◯	◯	◯
Practical skills related to business	◯	◯	◯	◯	◯

2. **Evaluate how important is to get knowledge about those ratios before start-up or SME to be prepared (literacy)**

Statement	strongly disagree (1)	disagree (2)	don't know (3)	agree (4)	Strongly agree (5)
Profit	◯	◯	◯	◯	◯
Costs	◯	◯	◯	◯	◯
Business outcome	◯	◯	◯	◯	◯
Cash-flow	◯	◯	◯	◯	◯
Profitability	◯	◯	◯	◯	◯
Liquidity	◯	◯	◯	◯	◯
Commitment structure	◯	◯	◯	◯	◯
Types of claims	◯	◯	◯	◯	◯
Stock planning	◯	◯	◯	◯	◯
Sales	◯	◯	◯	◯	◯
Quality of product	◯	◯	◯	◯	◯
Planning working time	◯	◯	◯	◯	◯
Productivity of work	◯	◯	◯	◯	◯

3. **Evaluate how important is to have competence about those areas before start-up or working in SME**

Statement	strongly disagree (1)	disagree (2)	don't know (3)	agree (4)	Strongly agree (5)
Non-standard forms of employment	◯	◯	◯	◯	◯
Outsourcing	◯	◯	◯	◯	◯
Personnel processes	◯	◯	◯	◯	◯
Internal logistics	◯	◯	◯	◯	◯
Reverse logistics	◯	◯	◯	◯	◯
Distribution logistics	◯	◯	◯	◯	◯
Recovery of machinery (investments to machinery, technology)	◯	◯	◯	◯	◯
Maintenance	◯	◯	◯	◯	◯
Business agenda	◯	◯	◯	◯	◯

Demographic data:
Gender

Male   Female

Age

 18 - 25   26 - 40   41 -55   56 - 65   65 +

Education

Vocational schoolsecondary school   university degree

Years of practice

 3 years   till 10 y.   till 20 y.   20 + y.