

FINANCIAL KNOWLEDGE AMONG MICRO-ENTREPRENEURS. A CASE OF KATOWICE CITY, POLAND

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Purpose: This study aimed to enhance the understanding of the financial knowledge (FK) levels among micro-entrepreneurs in Katowice City, Poland and is a partial answer to the OECD's call expressed in 2022&23's reports regarding the need to investigate and diagnose financial literacy and FK in Poland (including a subpopulation of SMEs, micro-entrepreneurs) and the first steps towards a roadmap for designing National Strategy for Financial Education. This study analyzed the FK levels among micro-entrepreneurs, explicitly focusing on adapting the OECD/INFE Toolkit 2022 (OECD/INFE/T2022) to the local context.

Design/Methodology/Approach: The study employed an adjusted, fine-tuned questionnaire and methodology to evaluate FK based on the OECD/INFE/T2022 (methodology and questionnaires), tailored to the socio-legal, organizational, and economic conditions of the country and region. The paper also involved a comprehensive review of the existing literature on the importance of FK for micro-entrepreneurs and FK surveys among them.

Findings: The research fills a significant gap in the international academic literature and responded to the OECD's recommendations for Poland, shedding light on the FK status among micro-entrepreneurs locally. Likewise, sets the groundwork for future research on FK among micro-entrepreneurs, s.a., local cyclical evaluations, research on a regional or national level, providing valuable insights for policymakers and practitioners.

Research Limitations/Implications: While the study on Katowice micro-entrepreneurs provided crucial insights for local stakeholders, further research across regions, nation-wide, through time is necessary to ensure a comprehensive understanding of FK among micro-entrepreneurs. Additionally, the OECD/INFE/T2022 questionnaire can be further adjusted and translated to encompass remaining subsections (financial attitudes and behaviors) for a multidimensional examination.

Originality/Value: This research significantly contributes to the call by the OECD for a more in-depth understanding of FK among SMEs, particularly micro-entrepreneurs, in Poland. Its findings underscore the critical role of FK in fostering the well-being and sustainable growth of micro-entrepreneurs; it enables stakeholders to target problematic areas of FK identified in the study and to design financial education programs adequate for mitigating diagnosed deficiencies, thereby making a valuable contribution to the literature, and governmental and market practice.

Keywords: Financial Knowledge, Micro-Entrepreneurs, OECD/INFE, Katowice.

Category of the paper: Research Paper.

Introduction

This study addresses a significant research gap identified in both the extensive literature on financial literacy and the OECD's 2022 and 2023 reports, which collectively underscore the need for a focused investigation into the financial knowledge (FK) levels among micro-entrepreneurs in Katowice City, Poland. The existing body of knowledge primarily centers on general FK, necessitating focusing on certain subpopulations such as SMEs and micro-entrepreneurs with a more localized examination tailored to the unique socio-legal, organizational, and economic conditions of the region (OECD/INFE, 2022a; 2022b). There are recommendations from the OECD that underscore the need for further research and engagement, particularly focusing on certain subpopulations such as SMEs and micro-entrepreneurs in Poland as to design the National Financial Education Strategies (NFES) (OECD, 2022b). G20 leaders emphasize the role of academia in designing effective NFES aligning with the OECD's call for research institutions and universities to assess FK in Poland (OECD, 2022b), as there is lack of NFES in Poland, however there are some steps that indicate progress in this regard, but necessitate further diagnosis of FK (OECD, 2023; European Commission, 2023b). Recognizing the unique challenges faced by micro-entrepreneurs, the literature emphasizes the importance of FK for their well-being and thriving, while the international literature emphasizes a research gap regarding diagnosing and investigating FK levels among micro-entrepreneurs on a national level (Brown et al., 2006; Hyder, Lussier, 2016; Sukurman, 2015; Jackson, 2021). This study analyzed the FK levels among micro-entrepreneurs, explicitly focusing on author's adaptation and fine-tuning of the OECD/INFE Toolkit 2022 (OECD/INFE/T, 2022) to the local context. To author's knowledge it is a first study regarding FK evaluation among micro-entrepreneurs in Katowice City, Poland with the OECD/INFE Toolkit 2022, especially with its national-context adjusted version. The paper also involved a comprehensive review of the existing literature on the importance of FK for micro-entrepreneurs and FK surveys among them.

Guided by the overarching need expressed by the OECD to delve FK in Poland, especially among SMEs and micro-entrepreneurs, this study seeks to answer two crucial research questions: What are the specific levels of financial knowledge (FK) among micro-entrepreneurs in Katowice City, Poland; and What is the extent of understanding of each basic FK concept, as established in the OECD/INFE Toolkit 2022 in the FK sub-section, among micro-entrepreneurs in Katowice City, Poland (OECD/INFE, 2022a; 2022b). The purpose of the article is as stated below: the primary purpose of this study is to contribute to the OECD's call for an in-depth understanding of FK among SMEs, with a particular focus on micro-entrepreneurs in Poland. It aims to enhance comprehension by analyzing FK levels in Katowice City, employing an adapted version of the OECD/INFE Toolkit 2022 (OECD/INFE/T, 2022) that is tailored to the local context (OECD/INFE, 2022a; 2022b). There are the following

intermediate objectives of the article: 1) employ a fine-tuned methodology and questionnaire, based on the OECD/INFE/T2022, to evaluate FK levels among micro-entrepreneurs in Katowice City, accounting for the socio-legal, organizational, and economic nuances of the region; 2) conduct a comprehensive review of existing literature, focusing on the relevance and significance of FK for micro-entrepreneurs, aligning with the specific conditions prevalent in Katowice City; 3) address the identified research gap in the international academic literature by responding to the OECD's recommendations for Poland, shedding light on the local FK status among micro-entrepreneurs, 4) lay the groundwork for future research on FK among micro-entrepreneurs, emphasizing the importance of local cyclical evaluations and research on regional or national levels. These insights will be invaluable for policymakers and practitioners alike (OECD/INFE, 2022a; 2022b).

This study assumes that an examination of FK among micro-entrepreneurs in Katowice City will reveal specific challenges and areas for improvement. The hypothesis posits that targeted financial education programs can be designed to address diagnosed deficiencies, thereby fostering the well-being and sustainable growth of micro-entrepreneurs (OECD/INFE, 2022a; 2022b). To achieve the study's objectives, an adjusted questionnaire and methodology, based on the OECD/INFE/T2022, will be employed. This approach ensures that the evaluation of FK levels is tailored to the socio-legal, organizational, and economic conditions specific to Katowice City. Additionally, a comprehensive literature review and FK surveys among micro-entrepreneurs will provide a multidimensional examination of the subject, aligning with the OECD's overarching recommendations (OECD/INFE, 2022a; 2022b).

The OECD/INFE (the OECD and its International Network on Financial Education) supports policymakers, institutions, public authorities, and academia in implementing national financial education (FE) strategies and targeted sub-population programs. They offer guidance, research, methodologies, and resources on financial literacy (FL), (FK), and FE, including measurement and evaluation tools (OECD/INFE, 2023b). The OECD is the EU's implementing partner for financial literacy projects, collaborating at both EU and country levels, with a recent focus on Poland (OECD/INFE, 2023a; 2023b), addressing Poland's lag in NSFE compared to other EU Members. Recently, the OECD, with the NWGFE (Polish National Working Group on Financial Education)¹, presented a 2021 assessment report on NSFE development in Poland, emphasizing FL, FI, and FK issues in Polish society, with a focus on Project 21PL32 (OECD, 2022a, p. 3). Recommendations include further research and engagement, especially for vulnerable subpopulations and stakeholders like the private sector, SMEs, and micro-entrepreneurs (OECD, 2022a, pp. 6-10, 108-133; 2022b, pp. 8-9, 26-27, 57-60, 102-103). While not a dedicated FL study, OECD's research included an inventory questionnaire on FL,

¹ Ministry of Finance (MF), the Ministry of Education and Science (MEiN), the National Bank of Poland (NBP), the Polish Financial Supervision Authority (UKNF), the Office of Competition and Consumer Protection (UOKiK), the Bank Guarantee Fund (BFG), the Warsaw Stock Exchange (GPW), the Central Securities Depository of Poland (KDPW) and the Financial Ombudsman (RF)) (OECD, 2023; 2022a; 2022b).

FE, and FI initiatives for public administration, private sector entities, and civil society organizations (OECD, 2022b, p. 9). The assessment report led to joint actions by the OECD and NWGFE for NSFE development in Poland, followed by an implementation roadmap (OECD, 2023). The OECD suggests future cooperation, encouraging research institutions and universities to assess FL and FE, understanding financial attitudes and behaviors in Poland (OECD, 2022b, pp. 10-11). The report recommends creating specific projects for FE, FK, and FL, considering the needs of target groups like SMEs, small businesses, and micro-entrepreneurs, to examine their current levels of FK, behaviors, attitudes, FL, and FI (OECD, 2022b, p. 11).

The OECD highlights three crucial points supporting this article: 1) SMEs play a critical role in Poland's economy, necessitating appropriate FK, FL, FE, and FI skills, 2) the absence of data on FE, FK, FL, FI needs in the SME sector in Poland, and 3) the recommendation for future research to understand specific FE, FK, FL, FI needs of SMEs in Poland (OECD, 2022b, p. 27; 2022a, pp. 24-25). Poland lacked a national FE strategy (NFES) or a policy for FL enhancement defining FL and recognizing the national importance of FE (OECD, 2022b, p. 122). However, a first-step roadmap for NFES in Poland has been recently published (OECD, 2023; European Commission, 2023b; OECD/INFE, 2023). While several organizations in Poland conducted FL surveys, the OECD recommends systematization for better coordination, using internationally acknowledged methodologies, and cyclical evaluation and monitoring (OECD, 2022b, pp. 130, 140-144). Region-specific methodologies, like OECD/INFE-based or globally recognized approaches, are recommended (OECD, 2022b, p. 21). Research using the globally acknowledged OECD/INFE 2022 methodology for studying FL, FK, and FI, especially among micro-entrepreneurs, is limited in the literature, particularly in the context of Katowice, Silesia region. Each region in Poland is unique due to historical, socio-demographic, and economic factors, with significant differences in economic and social development (OECD, 2022b, p. 21). G20 leaders emphasize academia's role in designing national and local government strategies and policies regarding FL, as academic research contributes significantly to shaping strategies and assessing effectiveness (Deutsche Bundesbank, 2017, p. 2). FK research among micro-entrepreneurs aids policymakers in establishing programs to support small business (SB) development in emerging markets (Hyder, Lussier, 2016).

Despite the significant role of small businesses (SBs) in various economies (Brown et al. 2006) (for their relevance in the EU and Poland, see (European Commission, 2020; 2023a; PARP, 2021; Witosz, Witosz, 2015, pp. 37-113), and in the UK (Brown et al., 2006), and in the U.S. (Jackson, 2021, p. 4), existing studies primarily focus on individuals and personal finance matters of the general public (OECD/INFE, 2016; 2017; Mitchell, Lusardi, 2011; 2015; Lusardi, Mitchell, 2011; Lusardi et al., 2010), creating a gap in investigating the FL levels of individuals who are also owner-entrepreneurs, owner-managers (a segment of the population simultaneously owning and managing their own SB, while remaining individuals in the general population) (Brown et al., 2006). FL among owner-entrepreneurs has consequences for SB

failure, with research revealing a significant correlation between financial illiteracy (FIL) and SB breakdown (Jackson, 2021, p. 4). FIL often leads to economic crises due to overspending, poor investment decisions, and high credit card use, contributing to social problems like excessive debt and business failure (Sukumaran, 2015). Pioneering research at Oxford Brooks University Business School on SBs ('owner-entrepreneurs') and FL indicates that varying degrees of FIL significantly impact the success or failure of this segment in the business community (Brown et al., 2006).

Despite entrepreneurs' particular need for FL, owner-managers, like the general population, exhibit low levels of FL, as evidenced by financial awareness and skills that may not enable them to confidently understand and analyze required financial information (Brown et al., 2006, p. 13). SBs must demonstrate competence and possess a specific blend of business skills, including a grasp of basic financial concepts, to survive and grow (Monk, 2000, p. 12). The term 'entrepreneur' refers to one who 'undertakes an enterprise' or 'owns and manages a business' (Boutillier, Uzunidis, 2013, p. 582). Small and Medium Enterprises (SMEs) in the EU (or more precisely, European Economic Area and Switzerland (European Parliament, 2023; Treaty on the Functioning of the European Union, 2016; 2020)) are defined based on staff headcount, turnover, or balance sheet total, with the 'micro' category having less than ten staff, turnover less than two million euros, or balance sheet total less than two million euros (European Commission, 2003; 2022; 2023a). SMEs are pivotal to Europe's economy, contributing to job creation, economic growth, and social stability endurance (European Commission, 2023a; 2020, p. 3). In 2023, SMEs constituted 99 pct. of all businesses in the EU, representing a major focus of EU policy to promote a conducive business environment (European Commission, 2023b). European Commission bodies actively address obstacles for SMEs through the recent SME Strategy (Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs, 2021). SMEs contribute more than half of Europe's GDP and play a significant role in adding value across all sectors of the economy (European Commission, 2023a). Although SMEs are recognized as an 'engine of the European economy,' realizing their full potential remains an ongoing process (Verheugen, 2022, p. 3; European Commission, 2023c).

In Poland, SMEs contributed 49.1 pct. to GDP in 2018 (calculations performed by the Statistics Poland (GUS, 2023; PARP, 2021, p. 6), with sole proprietorship being a prevalent form of business activity (PARP, 2021, p. 6; Gajewska, 2012, p. 59). Self-employment in Poland exceeds the EU28 average (OECD, 2023, p. 26), and SMEs, especially micro-entrepreneurs, dominate the business landscape (OECD, 2023, p. 26). PARP, the Polish Agency for Enterprise Development (PARP, 2023; PFR Group, 2023), reported that up to 99.8 pct. of enterprises were SMEs, with micro-entrepreneurs comprising 99.7 pct. Medium enterprises constituted 0.7 pct., and large ones accounted for 0.2 pct. (PARP, 2021). According to their legal-organizational form, as much as 87 pct. were natural persons operating a business (i.e., sole proprietors) (PARP, 2021, p. 6) of which 98.9 pct. were micro-enterprises (PARP,

2021, p. 6). Research indicates that women own 37 pct. of enterprises, with women commonly being owners of small businesses (Dźwigoł-Barosz, 2016, p. 131).

Polish legal literature also sees sole proprietorship as most common legal-organizational form of entrepreneurship in Poland (Witosz, Witosz, 2015, p. 39). A sole proprietorship means that a 'sole person' is the owner (or proprietor or tenant) and an operator of the company; furthermore, such an individual bears an unlimited liability with their own private assets for the debts of the company they operate (Bundesministerium für Finanzen, 2023; Gzik, 2018, p. 6).

Thus, is also called 'owner-entrepreneur' and 'owner-manager' (Brown et al., 2006, p. 179; Ropęga, 2013, p. 67), or a 'sole proprietorship', a similar concept across the EU, e.g. (Witosz, Witosz, 2015, p. 49; Gajewska, 2012, p. 59; Bundesministerium für Wirtschaft und Klimaschutz, 2023; Bundesministerium für Arbeit und Wirtschaft, 2023; Witosz, Witosz, 2015, p. 39). For the Polish literature on sole proprietorship, see (Witosz, Witosz, 2015, pp. 38-53). The form has its own unique specificity and characteristics for numerous reasons, see (Gzik, 2018, pp. 10-12; Ropęga, 2013, p. 57). Sole proprietors make critical decisions about their businesses, with their traits and behaviors, including directly impacting management quality (Ropęga, 2013, p. 67). Management functions in sole proprietorships are self-performed, with knowledge and knowledge acquisition influencing entrepreneurial decision-making, especially FK (Roper, Love, 2018; Kheradmand, Jafari, 2015; Rachapaettayakom et al., 2020). FK is crucial for managing risks and returns in financial activities and decision-making (Deutsche Bundesbank, 2017, p. 1). Given the vital role of SMEs in the Polish economy, providing appropriate FK, FL, and financial skills is imperative, as recommended by the OECD (OECD/INFE, 2023, p. 27).

FL and FK gain recognition at the highest policy level, as underscored by endorsed high-level principles from G20 leaders (OECD/INFE, 2020b, p. 3; 2021, p. 3). FK plays a crucial role in budgeting, saving, managing payables, and handling credit commitments, enhancing the ability to navigate uncertainties and avoid adverse financial situations (OECD/INFE, 2016, p. 11). Effective decision-making necessitates fundamental knowledge of economics and finance (Mitchell, Lusardi, 2015, p. 107; Lusardi, Mitchell, 2023, p. 19). The imperative to teach FL to entrepreneurs is grounded in the need to empower them for sound financial decision-making, fostering business prosperity and contributing to sustainable development (Rahmandoust et al., 2011). The OECD defines Financial Literacy (FL) as the amalgamation of financial awareness, knowledge, skills, attitude, and behaviors necessary for sound financial decisions and individual financial well-being (OECD/INFE, 2012, p. 2; Atkinson, Messy, 2012). This understanding aligns with the World Bank's perspective on FL (Zottel, 2013, pp. 2-5). A financially literate individual possesses basic knowledge of key financial concepts (Atkinson, Messy, 2012, pp. 6-7) and avoids enduring long-term consequences resulting from suboptimal financial decisions (Yoong, 2011, p. 76).

FK empowers individuals to allocate resources effectively over time, utilize sophisticated financial products for increased returns on financial assets, and achieve better investment outcomes (Lusardi et al., 2013, p. 2; Lusardi, Mitchell, 2023, p. 9). FK levels, assessed globally by various entities, including the World Bank, OECD, FINRA, National Bureau of Economic Research (NBER), the U.S., Global FL Excellence Center at the George Washington University (GFLEC), Directorate-General Health and Consumer Protection of the European Commission's and others, are crucial in evaluating individuals' knowledge of basic financial concepts (Zottel, 2013, p. 8; Bolaji-Adio et al., 2013; OECD/INFE, 2018; GFLEC, 2023). Financial Illiteracy (FIL) is defined as a lack of skills and knowledge in financial matters, hindering effective actions toward achieving goals (National Financial Educators Council, 2023). FIL results in the incapability to manage monetary resources successfully, impacting business outcomes (Jackson, 2021, p. 8). The relationship between FL, entrepreneurial concepts, related knowledge, and competencies directly influences entrepreneurial success or failure (Jackson, 2021). Insufficient FL skills in entrepreneurs pose a systemic problem, impacting entrepreneurship growth, economic prosperity, and garnering the attention of governmental stakeholders and society (Dahmen et al., 2014). In the context of sole proprietorships, particularly in emerging markets, low FL and FK levels may lead to adverse effects on entrepreneurs (Sucuahi, 2013). The vital role played by micro-entrepreneurship can be maintained by owner-entrepreneurs' knowledgeable financial management, furthermore, the fundamental principle dictating the success of micro-enterprises posits that achieving success in business is contingent upon the effective application of FL (Brown et al., 2006; Sucuahi, 2013).

The literature emphasizes the essential role of FK for owner-entrepreneurs, particularly in small business (SB) success where the owner often serves as the manager (Rachapaettayakom et al., 2020). This extends to the context of emerging markets as well (Hyder, Lussier, 2016; Oyadomari et al., 2017). The literature also highlights the crucial role of FL in entrepreneurial success and overall sustainable development (Rahmandoust et al., 2011; Swiecka et al., 2020, p. 700). Managerial Inadequacy Factors are identified as primary causes for SB failures (Anderson, 2012, pp. 3-40). Effective financial management and controls are paramount for SBs, necessitating owners with fundamental familiarity in accounting and finance, as well as basic financial concepts (Cadden, Lueder, 2012). While financial and managerial accounting skills are crucial for any business, small and family micro-businesses often lack these competencies, with only a few individuals possessing accounting backgrounds (Barbera, Hasso, 2013, p. 273). FK holds particular relevance for SB owner-entrepreneurs, given their multifaceted responsibilities for the survival of their businesses (Rachapaettayakom et al., 2020, p. 1). As SB entrepreneurs are often responsible for various tasks, including record-keeping and accounting, the acquisition of FK becomes imperative (Rachapaettayakom et al., 2020, pp. 2-3). For a comprehensive model detailing the level of FK acquisition and existing FK elements among owner-entrepreneurs, refer to (Rachapaettayakom et al., 2020, pp. 9-10).

Methods

The OECD, World Bank, and national governmental institutions and academia employ FK research toolkits (predominantly OECD's, World Bank's, GFLEC's), often utilizing surveys as diagnostic tools for FK assessment and the design of National Strategies for Financial Education (NSFE) (Zottel, 2013; Grifoni, Messy, 2012; Bolaji-Adio et al., 2013, pp. 8-9). For a comprehensive review of these tools, refer to (Bolaji-Adio et al., 2013, pp. 1-199) and for the review of NSFE status (Grifoni, Messy, 2012). The author adapted the widely acknowledged and globally employed OECD/INFE Toolkits (Methodology and Questionnaire) (OECD/INFE, 2015; 2018; 2022), specifically the most recent 2022 version (OECD/INFE, 2022), for surveying micro-entrepreneurs in Katowice, Silesian Region, Poland, focusing on the financial knowledge sub-section (FK) (OECD/INFE, 2022). These toolkits were developed iteratively through global stakeholder acknowledgment, with core questions centering on specific topics, including FK (OECD/INFE, 2018, p. 4; Kempson, 2009; Atkinson, Messy, 2012). The OECD/INFE Toolkits facilitate data collection for understanding FK and FL within a country, over time, across countries, and global and regional trends (OECD/INFE, 2018, pp. 4-5; 2022, pp. 6-7; 2016; 2017; 2020; 2021).

The methodology is versatile and can be applied to measure FL within specific subpopulations, such as regional or employed subpopulations (OECD/INFE, 2022, pp. 7-8), as done by the author. Adjustments to the toolkit are proposed based on research questions, sub-topics, or specific parts studied, considering the research form and purpose (OECD/INFE, 2022, pp. 7-8), while acknowledging research limitations on international comparability or national patterns extrapolation (OECD/INFE, 2018; 2022; 2015). The subsection on FK employed in the author's research has remained largely consistent across toolkit versions (OECD/INFE, 2018; 2022; 2015). Specific considerations regarding the author's use of the toolkit are detailed in (OECD/INFE, 2022, pp. 13-36), encompassing the core of the author's questionnaire. Additionally, the author followed guidelines on adapting and translating survey questions (OECD/INFE, 2022) and OECD/INFE surveys practice and Good Practice (OECD/INFE, 2018; 2022; 2015).

OECD/INFE Toolkits (OECD/INFE, 2018; 2022; 2015) prescribe a dual-format approach, encompassing both paper and digital versions, allowing for flexibility in questionnaire administration, including Face-to-Face (F-T-F), CAPI, and Online (Digital Format) interviews, aligning with the methodology and good practice standards (OECD/INFE, 2018, pp. 6-9). Survey sample sizes for FL research among sole proprietorships, specifically micro-entrepreneurs, vary across developed and emerging markets, such as Canada, the United Kingdom, the U.S., the Philippines, India, and Pakistan (Dahmen et al., 2014; Brown et al., 2006; Sage, 2012; Jackson, 2021; Guliman, 2015; Anshika et al., 2021; Sucuahi, 2013). Generally, these studies indicate insufficient FL levels among micro-entrepreneurs, suggesting

limitations in FK for effective decision-making (Dahmen et al., 2014; Brown et al., 2006; Anshika et al., 2021; Sucuahi, 2013; Guliman, 2015). Sample sizes are diverse, ranging from over a dozen up to three hundred, as dependent on the researched area's population and subpopulation of micro-entrepreneurs targeted by the study, i.e., above a hundred on the country-level (Sage, 2012; Brown et al., 2006; Anshika et al., 2021), on a state- or a regional-level fourteen subjects (Dahmen et al., 2014); and on a city-level from over a dozen up to hundred, as depending on the city's population (Sucuahi, 2013; Guliman, 2015). Some cities researched were estimated, e.g., to be approximately 1.63 million in 2015 and projected growth up to over 1.8 million (CPDO, 2019)), thus necessitating higher samples.

The Author's sample comprised fifty-one micro-entrepreneurs from Katowice (as the other sixteen questionnaires were excluded from the sample due to headquarters and area of business activity outside Katowice), utilizing Face-to-Face (Paper Format) and Online (Digital Format) interviews, aligning with OECD's recommendations (OECD/INFE, 2018, pp. 6-9). Face-to-Face interviews were personally conducted, adhering to the criteria of micro-entrepreneur status and Katowice-area business activity, and excluding questionnaires with missing information or technical faults. The final sample included twenty-eight Paper Format and twenty-three Digital Format questionnaires.

The Author employed purposive sampling, considering industry distinctions and adhering to the Polish Classification of Activities (PKD). This approach, necessitated by the formal status of micro-entrepreneurs and the voluntary nature of survey participation in Katowice-area businesses, provided targeted and relevant insights. A separate analysis of sixteen excluded digital questionnaires (from satellite cities) revealed comparable trends with minimal discrepancies in assessed metrics. Due to budget constraints and the academic nature of the survey, respondents did not receive any incentives for participation. Unlike commercial or well-funded market research practices, which often use gratification to ensure an adequate sample size (IQS, 2023, p. 1), the absence of incentives resulted in a relatively low response rate. Despite using mailing lists and conducting personal interviews over a two-month period (the entire project was carried out throughout the second half of 2023 until November), the author received a limited number of agreements from prospective participants. The co-authored project was titled 'Financial Knowledge and Financial Inclusion among Micro-entrepreneurs in Katowice City, Poland H2 FY 2023' authored by Lejman-Gaska A. and Ogórek M. and included other, separate elements and sections not discussed in this article. The primary qualifications for participation were a formal micro-entrepreneur status and business activity in Katowice City, Poland.

Results

Results from the Author' study on FK of micro-entrepreneurs in the Katowice region, Silesia, Poland, performed with the adjusted OECD/INFE, 2022 Toolkit are presented in Table 1 and Table 2. Results are discussed in the Discussion section.

Table 1.
Correct Answers to The Selected Financial Knowledge

Item	Understanding of Certain Financial Knowledge Concepts with an Adequate Question Code						
	interest paid on loan: QK4	simple interest: QK5	compound interest: QK6	simple and compound interest, as both: QK5 and QK6	inflation, as both: QK3 Q7c	risk-return relationship, as both: QK7a and QK7b	diversification Concept Q7d
Percentage of correct answers (pct.)	72.55	78.43	58.82	56.86	84.31	68.62	78.53

Note. Question codes: from QK2-QK7 a-d. Outcomes derived from MS Excel formulas were rounded to the second decimal place.

Source: Own research (Own Co-Authored Project: Lejman-Gąska, Ogórek, 2023).

Table 2.
Financial Knowledge Score (FKS) Distribution with Minimum Target Score (MTS)

Item	Financial Knowledge Score (FKS) Distribution and MTS (Minimum Target Score)							
	Threshold Evaluation							
	0 points (FKS 0, that is below MTS)	1 point (FKS 1, that is below MTS)	2 points (FKS 2, that is below MTS)	3 points (FKS 3, that is below MTS)	4 points (FKS 4, that is below MTS)	5 points (FKS 5, that is above MTS)	6 points (FKS 6, that is above MTS)	7 points (FKS 7, that is above MTS)
the number of micro-entrepreneurs who received a given FKS (percentage in the brackets)	0 (0 pct.)	0 (0 pct.)	3 (5.88 pct.)	5 (9.8 pct.)	6 (11.76 pct.)	7 (13.73 pct.)	15 (29.41 pct.)	15 (29.51 pct.)

Note. The MTS is determined for each set of tools or subsections in the OECD/INFE Toolkits, typically at an approximate level of 71.43%, depending on the maximum number of points (OECD/INFE, 2018, 2016). For example, the OECD/INFE established the MTS for FK as achieving at least five correct out of seven points (OECD/INFE, 2016; 2020b). Outcomes derived from MS Excel formulas were rounded to the second decimal place.

Source: Own research (Own Co-Authored Project: Lejman-Gąska, Ogórek, 2023).

Discussion

Global FL levels are notably low (OECD/INFE, 2017, p. 3; 2016), a concern echoed in the case of Polish (Katowice) micro-entrepreneurs, although they outperformed the overall Polish population (OECD/INFE, 2018; 2022). Utilizing the FK Score (FKS), a synthetic scoring measure, respondents' performance is assessed based on correct answers, revealing the

proportion with minimum acceptable elementary financial knowledge (OECD/INFE, 2017, p. 8). The creation and analysis of FKS are pivotal metrics (OECD/INFE, 2018; 2022, pp. 30-32). Financial illiteracy is identified through the Minimum Target Score (MTS), indicating the percentage with a minimal acceptable level of basic financial education (MTS is a threshold, a cut-off for FIL indication), set at approximately 71.43 pct. of connectedness (OECD/INFE, 2018; 2016). For FK, the MTS is, for instance, achieving at least five correct out of seven points (OECD/INFE, 2016; 2020b).

In the OECD/INFE 2020 study on FL, encompassing 26 economies, including Poland, only 65 pct. of Polish respondents met the MTS on FK (OECD, 2022b, p. 45), while Katowice micro-entrepreneurs surpassed this, with 72.55 pct. This data implies superior knowledge of basic financial concepts over general population, still nearly only three-thirds of surveyed micro-entrepreneurs exhibited a minimum acceptable level of basic FK, that cannot be regarded as a satisfactorily outcome adequate for entrepreneurial resilience and growth. The results highlight the ongoing relevance of the OECD's 2016 recommendation for Poland to focus on financial knowledge (FK). The OECD suggests that countries like Poland may need to prioritize knowledge to ensure their populations understand Financial Literacy principles (OECD/INFE, 2016, p. 7). None of the respondents scored zero or only one correct answer. However, one in four entrepreneurs obtained scores below the Minimum Target Score (MTS). Since all questions pertain to basic FK concepts, it is concerning that only about a third of surveyed micro-entrepreneurs could answer all questions correctly. This underscores that basic financial concepts' understanding cannot be taken for granted, even in regions like Katowice, known for micro-entrepreneurial activities (Lusardi, Mitchell, 2023, p. 5).

Globally, and especially in developed markets, there is limited knowledge about essential concepts, such as risk diversification (Lusardi, Mitchell, 2023). However, the Author's results reveal that other basic FK areas posed even greater challenges for micro-entrepreneurs. While 78.43% understood risk diversification, other fundamental concepts, such as risk-return relationships and understanding compound interest (both simple and compound), were less clear. Simple interest was relatively well understood (by over three-fourths of respondents), but the concept of compound interest was grasped solely by 58.82% of micro-entrepreneurs. The OECD, which measures understanding of both simple and compound interest, found that only 56.86% of surveyed micro-entrepreneurs exhibited such understanding. FK is crucial for understanding and managing finances (Sukumaran, 2015) and is indispensable for the success of entrepreneurship (Jackson, 2021, p. 7). It serves as a vital tool for business owners (owner-entrepreneurs), offering the necessary financial tools for informed decision-making that contributes significantly to micro-entrepreneurial success (Brown et al., 2006; Dahmen et al., 2014).

The absence of Financial Literacy is a common deficiency among small business (SB) owners (Rahmandoust et al., 2011, p. 62). Therefore, FK among Polish micro-entrepreneurs should be a target in the forthcoming National Strategy for Financial Education (NSFE),

with a focus on specific concepts and areas, such as risk-return relationships, compound interest, and loan interests. On the other hand, inflation was well understood by over 96% of micro-entrepreneurs, aligning with the OECD's previous assessments of the general public in Poland, where inflation was also very familiar (OECD/INFE, 2018). The results highlight the ongoing relevance of the OECD's 2016 recommendation for Poland to focus on financial knowledge (FK). The OECD suggests that countries like Poland may need to prioritize knowledge to ensure their populations understand Financial Literacy principles (OECD/INFE, 2016, p. 7). None of the respondents scored zero or only one correct answer. However, one in four entrepreneurs obtained scores below the Minimum Target Score (MTS).

Since all questions pertain to basic FK concepts, it is concerning that only about a third of surveyed micro-entrepreneurs could answer all questions correctly. Nonetheless, as literature evidenced, knowledge of basic financial concepts cannot be taken for granted, even in a country with well-developed financial markets (Lusardi, Mitchell, 2023, p. 5) and, accordingly, in Katowice region in micro-entrepreneurial circles it cannot be taken for granted as well. Globally and in developed markets, the knowledge is particularly low about essential and fundamental concepts, s.a., risk diversification (Lusardi, Mitchell, 2023); however, the Author's results show that other basic FK was even more problematic for micro-entrepreneurs. However, the Author's results reveal that other basic FK areas posed even greater challenges for micro-entrepreneurs. While 78.43% understood risk diversification, other fundamental concepts, such as risk-return relationships and understanding compound interest (both simple and compound), were less clear. Simple interest was relatively well understood (by over three-fourths of respondents), but the concept of compound interest was grasped solely by 58.82% of micro-entrepreneurs. The OECD, which measures understanding of both simple and compound interest, found that only 56.86% of surveyed micro-entrepreneurs exhibited such understanding. FK is crucial for understanding and managing finances (Sukumaran, 2015) and is indispensable for the success of entrepreneurship (Jackson, 2021, p. 7). It serves as a vital tool for business owners (owner-entrepreneurs), offering the necessary financial tools for informed decision-making that contributes significantly to micro-entrepreneurial success (Brown et al., 2006; Dahmen et al., 2014).

The absence of Financial Literacy is a common deficiency among small business (SB) owners (Rahmandoust et al., 2011, p. 62). Therefore, FK among Polish micro-entrepreneurs should be a target in the forthcoming National Strategy for Financial Education (NSFE), with a focus on specific concepts and areas, such as risk-return relationships, compound interest, and loan interests. On the other hand, inflation was well understood by over 96% of micro-entrepreneurs, aligning with the OECD's previous assessments of the general public in Poland, where inflation was also very familiar (OECD/INFE, 2018). FK empowers individuals for financial control, active saving, debt avoidance, and a nuanced comprehension of financial and economic risks (OECD/INFE, 2020, p. 3). Micro-entrepreneurs lacking insight into the risk-return relationship may make suboptimal financial decisions, leading to distress or

bankruptcy. Similarly, a deficiency in understanding compound interest hampers efficient fund management. The OECD recommends enhancing FL skills, especially in budgeting, interest understanding, and the advantages of compounding, inflation, and risk diversification, through formal systems (OECD/INFE, 2020, p. 8).

Macro-regional specificities, particularly in post-transitional economies, shape FK and FL survey results (OECD/INFE, 2020; 2021). Post-transitional countries exhibit low FL, elementary FK, and limited finance use (OECD/INFE, 2021, pp. 9-12), scoring lower than EU and OECD economies (OECD/INFE, 2020, p. 7). In the CIS region, the average FKS is 51.1% (3.6 out of 7 questions) (OECD/INFE, 2021, p. 9). In the SEE region, micro-entrepreneurs' FKS variability, with one-third scoring seven, contrasts with 27.44% below MTS. Those failing or barely meeting MTS constitute 41.17%, reflecting the survey results in Katowice. Policymakers in post-transitional economies like Poland need sustained policies for financial literacy (OECD/INFE, 2021, p. 12). Globally, FK is low, even in developed countries with advanced financial markets (Mitchell, Lusardi, 2015, p. 1). Thus, country-specific financial education programs and NFES are imperative. In the 2016 global FL Survey, Poland ranked lowest among thirty countries, significantly below the OECD average, and inferior to other CEE/CESEE post-transformational countries (OECD/INFE, 2016, p. 8). A nationwide survey of micro-entrepreneurs may further inform this data. Benchmarking against other CEE countries can validate trends in subpopulations like micro-entrepreneurs.

Testing individuals' knowledge of basic financial concepts holds the advantage of revealing their familiarity with more complex ideas, such as the risk-return relationship, the term structure of interest rates, and the compounding of interest over extended periods (Lusardi, Mitchell, 2023, p. 4). The author's survey underscores specific areas of financial knowledge (FK) and related concepts that demand attention in financial education (FE) policies in Poland. These targeted areas will be emphasized in the upcoming National Financial Education Strategy (NFES), currently under development by the NWGFE with OECD oversight.

Sole proprietorships, especially at smaller scales, demonstrate limited awareness of business and financial risks, underscoring the importance of risk management (Ropega, 2013, p. 171). Gzik (2018) explores risk types for sole proprietorships (pp. 13-16) and underscores the pivotal role of risk minimization for small enterprise success (pp. 16-18). Effective risk management relies on strong FK, essential for handling financial activities and decisions (Deutsche Bundesbank, 2017, p. 1). In small businesses (SBs), sole proprietors, or owner-managers, wield significant influence over critical decisions, and their traits and behaviors shape the company's management quality (Ropega, 2013, p. 67). Management functions in sole proprietorships are self-performed (Gajewska, 2012). Knowledge acquisition, particularly in FK, directly influences entrepreneurs' decision-making, supporting their activities (Roper, Love, 2018; Kheradmand, Jafari, 2015; Rachapaettyakom et al., 2020). Existing literature strongly emphasizes the direct contribution of FK to the success of small businesses (Hyder, Lussier, 2016; Oyadomari et al., 2017). Given the crucial role of Small and Medium-sized

Enterprises (SMEs) in the Polish economy, providing them with appropriate FK, financial literacy (FL), and financial skills becomes imperative, aligning with OECD recommendations (OECD/INFE, 2023a, p. 27).

Summary

The author responded to the OECD's call for further research on financial education (FE), financial knowledge (FK), and financial literacy (FL) in Polish society, focusing on subpopulations like SMEs and micro-entrepreneurs (OECD, 2022a, pp. 6-10, 108-133; 2022b, pp. 26-27, 60, 102-103; 2022b, pp. 8-9, 57-59). The results align with OECD's recommendations, supporting the rationale behind the development of the National Strategy for Financial Education (NSFE) in Poland (OECD, 2023). Acknowledging the critical role of SMEs in the Polish economy, the article endorses the OECD's idea of providing them with suitable FK, FL, FE, and financial skills (OECD, 2022b, p. 27; OECD, 2022a, pp. 24-25). The publication addresses the OECD's identified data gap concerning the needs of FE, FK, FL in the SME sector in Poland (OECD, 2022b, p. 27; OECD, 2022a, pp. 24-25).

The article's results can be viewed as a partial response to the OECD's recommendation for additional research to understand the specific needs and levels of FE, FK, FL in SMEs in Poland (OECD, 2022b, p. 27; 2022a, pp. 24-25). Considering Poland's lag behind other EU countries in having an NFES or other FE policies and programs (OECD, 2022b, p. 122), the findings contribute to the Polish NFES roadmap, particularly in shaping NFES in the scope it is related to SMEs and micro-enterprises and dedicated, targeted FK projects for micro-entrepreneurs and SMEs on a local level. To address the FK diagnosis and identification of FK local specifics as recommended by the OECD for effective FE, FK, and FL initiatives (OECD, 2022b, p. 115), the paper diagnoses such FK specificities among micro-entrepreneurial groups in Katowice. However, this diagnosis is an initial step, urging further research to enhance micro-entrepreneurs' long-term financial well-being comprehensively and multidimensionally throughout the region (Silesia) and Poland, considering additional elements beyond FK, such as financial behaviors and attitudes. Research findings underscore the critical role of FK in fostering the well-being and sustainable growth of micro-entrepreneurs; it enables stakeholders to target problematic areas of FK identified in the study and to design financial education programs adequate for mitigating diagnosed deficiencies, thereby making a valuable contribution to the literature, and governmental and market practice.

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