ADVANCES IN BUSINESS-RELATED SCIENTIFIC RESEARCH JOURNAL (ABSRJ)

Volume 13, Number 2 (2022)

ISSN 1855-931X

ABSRJ Advances in Business-Related Scientific Research Journal

geacollege Faculty of Entrepreneurship

REVIEW OF RESEARCH IN THE FIELD OF FINANCIAL AND NON-FINANCIAL REPORTING AND ITS CONNECTION TO SUSTAINABLE DEVELOPMENT

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Abstract

The aim of this paper is: (1) to explore the theoretical background on financial and non–financial reporting, and sustainable development; (2) to research and review novelties that academic researchers have done in the field of financial and non-financial reporting; (3) to research and review novelties that academic researchers have done in the field of financial and non-financial reporting and their links to sustainable development; and (4) to provide a review of the research literature in these areas. In our research, we have used the detailed analysis of literature review, using the Scopus database, to summarize past findings in a research field. By analysing the relevant scientific sources and based on the results of the research, it can be concluded that there is lack of research in the area that connects financial and non-financial reporting to sustainable development and it needs further efforts and research. The intention and goal of this research was to make not only academic researchers but also managers in practice aware of the importance of financial and non-financial reporting in the function of sustainable development, as well as to make researchers and practitioners aware that there is insufficient research in this area. The obtained results can be used to expand the current scientific knowledge about the financial and non-financial reporting and its connection to sustainable development.

Key Words

Sustainable development; financial reporting; non-financial reporting; sustainable management; reporting regulations.

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INTRODUCTION

Globalization and internationalization of the market put great pressure on the business of the company, which is reflected in the economic development of the company and society as a whole. Corporate reporting, which includes financial and non-financial reporting, today is one of the prerequisites and foundations of effective business decision-making. Having accurate and quality information from mandatory and voluntary reporting is key to making business decisions and managing an organization. Access to information and data is greatly facilitated through corporate reporting (financial and non-financial) in the function of sustainable growth and development because it enables timely decision-making, managing, and positioning of companies in the market. The basic premise of the functioning of the market and all its stakeholders is the availability of accurate and timely information, but there is still unequal access to information between its participants (both internal and external). Due to that, the problem of information asymmetry arises with the appearance of the problem of unfavourable choice and moral hazards, and privileged information. Quality and transparent corporate reporting (financial and non-financial) is a prerequisite for the efficient functioning of the capital market, which today ultimately leads to the cohesion of the elements of sustainable development. This paper aims to explore and show the importance of financial and non-financial reporting, and its connection with the sustainable growth and development of companies.

For the purpose of researching and reviewing novelties in the field of financial and non-financial reporting, numerous world literature has been researched. In this research, papers within the Scopus database were used to gather information on the research topic, thus showing that the field of financial and non-financial reporting has been researched by a large number of authors but is still insufficient in the field of financial and non-financial reporting in the function of sustainable development. To demonstrate the results of research (and the scarcity of this research topic regarding the connection between financial and non-financial reporting, and sustainable development), the results of of a search of the Scopus database are presented, having led to 882 scientific papers dealing with financial and non-financial reporting, and 285 papers dealing with financial and non-financial reporting and its connection to sustainable development. The number of papers investigating financial and non-financial reporting and its connection to sustainable development has increased substantially from 2018 to 2022, showing an understanding of the importance of the observed topic and the necessity of implementation and application in business. Most of the research papers were from Italy, the United States, and Spain, and most of them belong to the subject area of Business, Management and Accounting.

THEORETICAL FRAMEWORK

Financial and non-financial reporting

Financial and non-financial reporting is an important element of good and quality management of the organization. Responsibility for the quality management and leadership of the organization lies with the management in charge of performing basic managerial functions: planning, organizing, leading, and controlling. Inefficient organization and its inefficient management are limiting factors in the overall development of an organization, both nationally and internationally. On the other hand, the successful execution of the basic management functions by quality management achieves a high level of efficiency, which leads to attaining a competitive position in the market. Successful management implies efficient and effective execution of business operations and focused and transparent management of the organization. Being successful in the market means achieving a positive business result, generating a profit, and thus maintaining and improving the company's position in the market. The information needed for business decision-making is obtained from various sources, but we can say with certainty that the key, if not the most important, source of information for business decision-making is financial statements (financial reporting) as holders of accounting information. When it comes to company management, it is impossible to ignore accounting as a fundamental source of information (Žager et al., 2007).

Financial reporting has existed for many years and over time has changed and evolved according to the needs of the market and its users, as it must always be in accordance with adopted accounting standards. Modern financial reporting is based on the so-called conceptual frameworks, the most famous of which are the FASB and the IASB. Unlike financial reporting non-financial reporting currently belongs to additional voluntary reporting (disclosure), which today is a good business practice regarding the publication of financial and non-financial information that is not covered by mandatory (legal) reporting, increasing business transparency and strengthening integrity, position, and reputation of companies in the market. Non-financial information reporting refers to the disclosure of all other information except financial information, and its development has advanced in recent years (Gulin et al., 2016). Non-financial reporting is a process of preparing and publishing non-financial information on the efficient operation of companies in terms of social responsibility and the environment. Non-financial reporting is becoming the interest of global and domestic researchers and includes business ethics, financial accounting, and strategic management (Turzo et al., 2022).

The link between sustainability, and financial and non-financial reporting, with an emphasis on sustainability reporting, is provided by the Esteban-Arrea and Garcia-Torea study (2022), which examines the current level and regulation of sustainability reporting by examining possible increases in sustainable transparency for all the stakeholders. European Union countries have adapted their legislation to include the EU Non-Financial Reporting Directives 2014/95 EU, i.e. the "Non-Financial Reporting Directive" (NFRD). The Non-Financial Reporting Directive prescribes only the minimum requirements for the publication of the non–financial reporting (NFI) and does not contribute to increasing the comparability of the non–financial

reports (Aureli et al., 2019; Borga et al., 2009; Pizzi et al., 2021), which suggests to public interest entities to publish non-financial reports on social and environmental aspects (Garcia-Torea et al., 2020). Research conducted by Saverio et al. (2015) investigate whether the corporate social responsibility (CSR) orientation of a firm affects its reporting incentives. Cosma et al. (2022) deal with non-financial reporting regulated by the EU Directive 2014/95, i.e. they want to examine and present the limitations of the Non-Financial Reporting Directive (NFRD) in achieving its essential purpose that refers to achieving sustainability and contribution (goals of the United Nations Agenda (UN) 2030). The first study, showing the effects of the NFR Directive's reporting across multiple countries, was conducted by Ottenstein et al. (2022). They wanted to examine the effects of the EU Directive 2014/95 of Non-Financial Reporting on corporate sustainability reporting practices (with an emphasis on the availability and quality of information, and its comparability and credibility). Through regression analyses they show that the EU Directive 2014/95 affects the quantity and quality of sustainability reporting (Ottenstein et al., 2022). From 2018, EU Directive 2014/95 requires large companies (listed companies, banks, insurance companies, i.e. companies of public interest) to submit non-financial reports, while small and medium-sized companies are not subject to this regulation.

So far, non-financial reporting requirements have been regulated through a standard of voluntary reporting (e.g. the Global Reporting Initiative), which has shown in practice the incompatibility of data (Christensen et al., 2021). The causes of incompatibility may be related to the lack of standardization and the multitude of guidelines governing NFIs and the use of different NFI-related standards (Van Wensen et al., 2011; Boiral, 2017). Zarzycka and Krasodomska (2022) in their research did regression analysis to examine different Key Performance Indicators (KPIs) and the way companies publish them in their non-financial reports. Results indicate that their comparison between different industries was difficult. It is through this research that the authors contribute to the understanding of the differences in the quality of the presentation of KPIs and the selection of published KPIs (Zarzycka and Krasodomska, 2022). To achieve comparability of information, it is crucial to achieve and implement reporting based on standards (for non–financial reporting), which would mean that standards require a mandatory requirement for all reporting participants and not only those of public interest (EFRAG, 2021). Financial indicators are not enough to develop and maintain a competitive position where non-financial indicators create great importance and a role. Hategan et al. (2021) through their research confirm that there is a positive correlation between non-financial reporting and financial performance, thus confirming that non-financial reporting affects financial performance. The challenge of non-financial reporting is also addressed by Beleneși et al. (2021), who confirm the existence of a statistically significant positive correlation of medium intensity between the index of publishing non-financial information and publishing a non-financial report. The combination of financial (legally regulated and mandatory for all market participants) and non-financial reporting and its application is visible

through practice and gives clear results which the management of the organization is based on.

Sustainable development

The concept of sustainable development originated and began to be mentioned in the 80s of the 20th century, and the focus is on the connection between the development of society and environmental protection. Today, companies need to have an effective and, above all, clear framework on how to face the challenges that the market poses to them, i.e. how to move towards a sustainable society and achieve sustainable development. Orientation of sustainable and quality management ensures process optimization, minimizing resource consumption, and maximizing other benefits associated with the business processes of the organization. There is a wide range of tools, frameworks, principles, strategies, and processes on the market that create and guide the relationship and action towards the sustainability framework. The concept of sustainable management is based on the quality management of the organization and is aimed at preserving the sustainability of managed organizations (resources, processes, people). It is necessary to strengthen the comprehensiveness and credibility of sustainability reports through the involvement of stakeholders in the sustainability reporting process. The same can be achieved by strengthening internal and external management mechanisms, which is the responsibility of corporate managers (Habiba et al., 2022). Ensuring sustainability through all business processes and activities of the company leads to long-term success and competitiveness, and contributes to the image and reputation of the company.

The concept of sustainable development was first mentioned in 1987. where sustainable development is defined through three key factors: 1. economic (emphasis on ensuring one's economic development); 2. environmental (sustainability of future development and reduction of environmental pollution); and 3. social (ensuring proper cohesion in society). All three dimensions overlap and complement each other, and their joint action and respect ensure and achieve social cohesion and sustainability of the economic system. Respecting the concept of sustainable development and doing business sustainably requires companies to define strategies and create an economy that can regenerate and be sustainable. To ensure sustainable development in the company's business, numerous business transformations are necessary, from various digital to technological transformations, while respecting economic concepts, which are potential and possible solutions for sustainable development. Several opportunities or strategies contribute to sustainable development, namely green growth, the circular economy, and the bio-economy. All of the above are aimed at focusing on resource efficiency and encouraging low-pollution industries, as well as encouraging recycling and the circular flow of materials and energy (Beg et al., 2018; Beg, 2018).

At the global level, it is necessary to awaken and develop an awareness of the need to accept the concept of sustainable development. The

application of the concept of sustainable development is crucial in achieving a balance between economic, social, and environmental requirements of a globalized market that is faced daily with unemployment, migration, climate change, poverty, etc. Research done by Elif (2019) proves that social responsibility (connected to sustainable development) has a positive relationship with financial performance. Habiba and Mahbub (2019) believe that companies need to monitor sustainable behaviour to improve efficiency and reputation, in addition to increasing chances of market survival. The Environmental, Social and Governance (ESG) Guidelines are part of non-financial reporting and help companies in the transparency of published data. A study conducted in Japan by Darnall et al. (2022) shows that companies that use ESG guidelines present 39% more sustainability data compared to companies that publish sustainability reports but do not follow the guidelines for ESG reporting (Darnall et al., 2022). Salehi and Arianpoor (2021) identify essential indicators necessary for business sustainability and reporting, and provide guidance for future performance evaluation and reporting decisions. Financial and non-financial reporting is one of the key factors contributing to sustainable development. It is necessary to fully implement the regulation (from the aspect of non-financial reporting) to achieve complete sustainability from the aspect of reporting in the function of sustainable development.

METHODOLOGY

For the purpose of researching and reviewing the field of financial and non-financial reporting, numerous world literature has been researched. Papers within the Scopus, Web of Science, and Google Scholar databases were used to gather information on the research topic and its connection to sustainable development, which shows insufficient research in this area. In all three databases, very few papers were found to have investigated the financial and non-financial reporting in the function of sustainable development. Furthermore, papers within the Scopus database were used to gather information on the research area of financial and non-financial reporting in the function of sustainable development, and are presented in this paper. Many international researchers have dealt with and studied financial and non-financial reporting, but a small number connect it with sustainable development. Today, financial and non-financial reporting is the subject of numerous research and topics by numerous authors from various fields. Many studies dealing with this topic have shown that financial and non-financial reporting is in the function of transparent business and visibility of the organization, contributing to sustainable business and creating loyal and long-term relationships with business partners and the market. However, there is still lack of research that deals with financial and non-financial reporting, especially research that connects financial and non-financial reporting with sustainable business and development, which is evident from the review of the researched literature. To show research papers on this topic, we present here the results of Scopus database

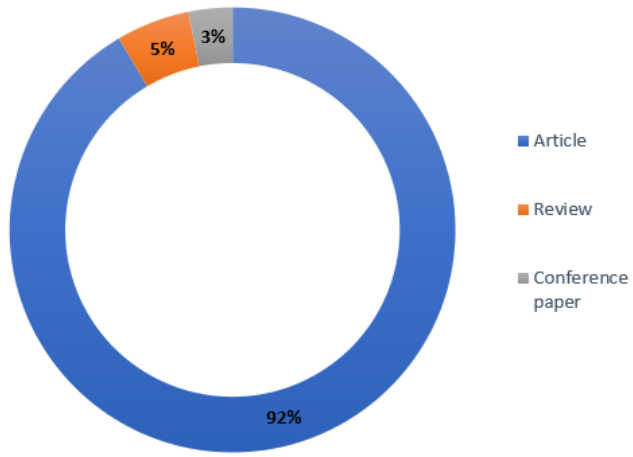
searches that include the keywords “Financial reporting + Non–financial reporting + Sustainable development” searched in “Title, Abstract, and Keywords” of documents belonging to Scopus databases. A search of the Scopus database using the following approach (TITLE-ABS ((financial AND reporting)) AND ((non-financial AND reporting)) AND (sustainable AND development) AND (LIMIT-TO (LANGUAGE, "English") resulted in 285 scientific papers.

FINDINGS

As mentioned, we searched the Scopus database to find data and studies that deal with financial and non-financial reporting in the function of sustainable development. The first research results show results on financial and non-financial reporting, while the second step of the research presents results on financial and non-financial reporting in the function of sustainable development. The first results are the results following the research approach (TITLE-ABS- financial AND reporting)) AND ((non-financial AND reporting), while the second step of the research presents results following the research approach (TITLE-ABS- financial AND reporting)) AND ((non-financial AND reporting)) AND (sustainable AND development). The presented researched results are grouped into several areas according to: (1) documents by type; (2) documents by subject area; (3) documents by year; (4) documents by country/territory; (5) documents per year by source; and (6) documents by author.

The first research results present an investigation of financial and non-financial reporting. This step resulted in 882 papers (articles (807), reviews (47), and Conference papers (28) (Figure 1).

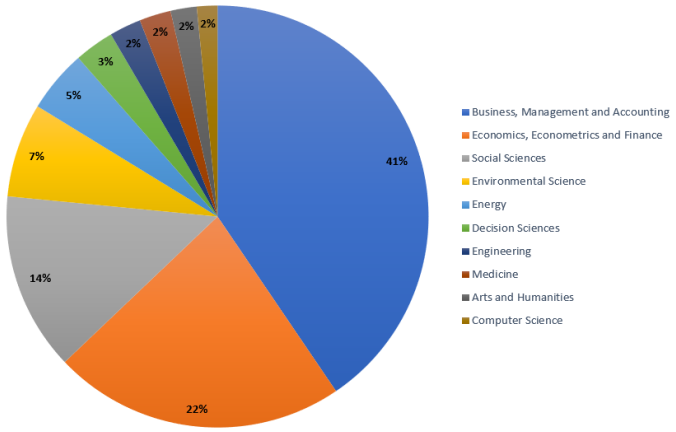
Figure 1. Documents by type investigating financial and non-financial reporting in the Scopus database (1993-April 2022)



Source: Own survey.

The research area of the research topic presents the period from 1993 to April 2022, and includes various subject areas (Figure 2). Figure 2 presents the documents by subject area exploring the financial and non-financial reporting in the period between 1993 and April 2022 in Scopus. Most of the papers belong to the subject area of Business, Management and Accounting, Economics, Econometrics and Finance, Social Sciences, Environmental Science, Energy, Decision Sciences, Engineering, Medicine, Arts and Humanities, and Computer Science. Other areas have fewer than 10 papers (only 2%) regarding financial and non–financial reporting.

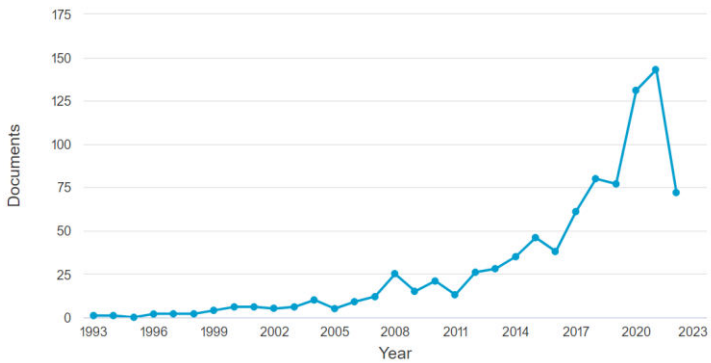
Figure 2. Documents by subject area investigating financial and non-financial reporting in the Scopus database (1993-April 2022)



Source: Own survey.

The number of papers that investigate financial and non-financial reporting has increased substantially in 2021 (143 papers). A growing trend is noticeable from 2015 (46 papers), 2016 (38 papers), 2017 (61 papers), 2018 (80 papers), 2019 (77 papers), 2020 (131 papers), 2021 (143 papers), and April 2022 (72 papers) (Figure 3).

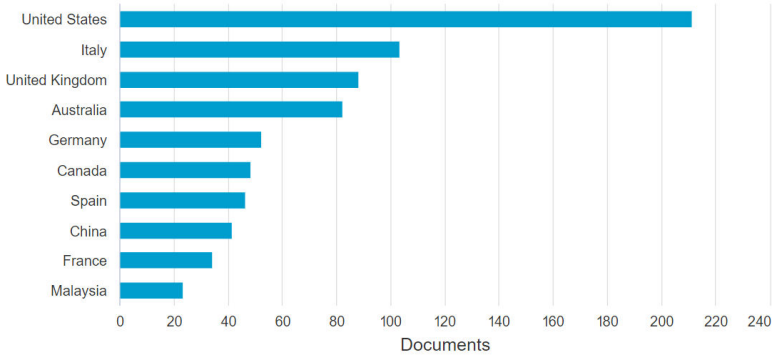
Figure 3. Number of papers investigating financial and non-financial reporting in the Scopus database (1993-April 2022)



Source: Own survey.

Most of the research papers were from the United States (211 papers per country), Italy (103 papers per country), the United Kingdom (88 papers per country), Australia (82 papers per country), Germany (52 papers per country), Canada (48 papers per country), Spain (46 papers per country), China (41 papers per country), France (34 papers per country), and Malaysia (23 papers per country). Other countries that are exploring research areas have fewer than 20 papers per county (Figure 4).

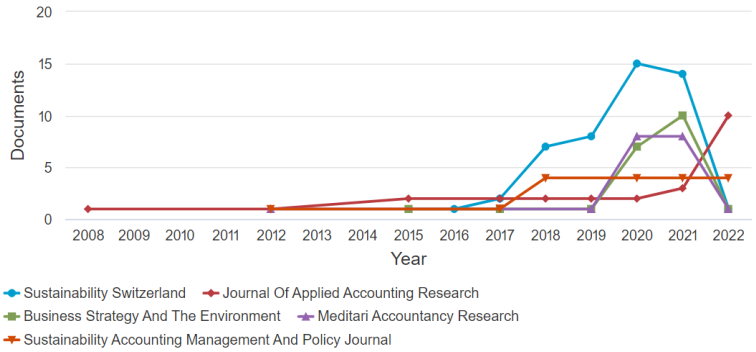
Figure 4. Country of origin of the authors investigating financial and non-financial reporting in the Scopus database (1993-April 2022)



Source: Own survey.

Figure 5 presents the journals that published the papers investigating financial and non-financial reporting in the period between 1993 and April 2022 in Scopus. As seen in Figure 5, the growing trend with a larger number of papers started in 2008 and has had an increasing trend since 2018. The largest number of papers were published in Sustainability Switzerland (48 papers), Journal of Applied Accounting Research (25 papers), Business Strategy and the Environment (21 papers), Meditari Accountancy Research (19), and Sustainability Accounting Management and Policy Journal (18 papers). Other journals have published fifteen or fewer papers regarding the research topic.

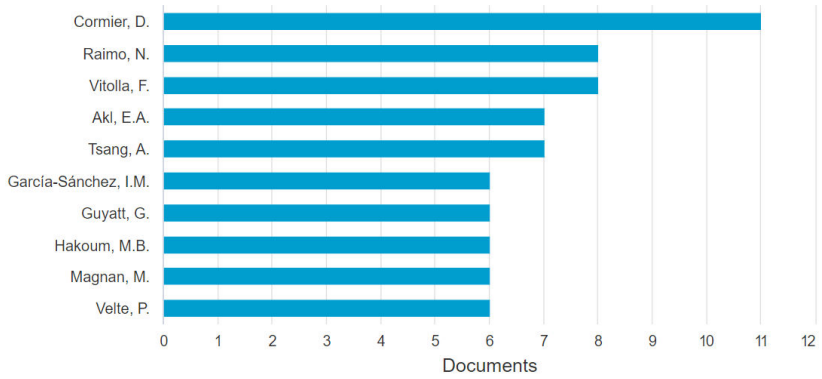
Figure 5. The journals that published the papers investigating financial and non-financial reporting in the Scopus database (1993–April 2022)



Source: Own survey.

Regarding authors who deal the most with the research topic are Cormier, D. (11 papers), Raimo, N. (8 papers), Vitolla, F. (8 papers), Aki, E.A. (7 papers), Tsang, A. (7 papers), García-Sánchez, I.M., Guyatt, G., Hakoum, M.B., Magnan, M., and Velte, P. (each author has 6 papers). Other authors have fewer than 5 papers that explore financial and non-financial reporting (Figure 6).

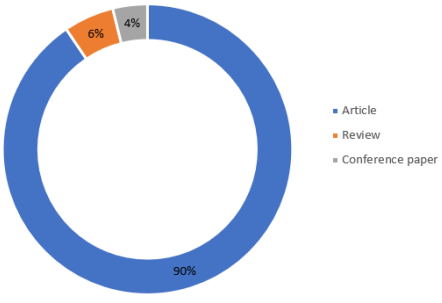
Figure 6. Documents by the author investigating financial and non-financial reporting in the Scopus database (1993–April 2022)



Source: Own survey.

The second step of the research presents an investigation of financial and non-financial reporting and its connection to sustainable development. This step resulted in 285 papers (articles (258), reviews (16), and Conference papers (11) (Figure 7). Through this research, the lack of investigation regarding the connection between financial and non-financial reporting and sustainable development is evident. The first paper that puts reporting (financial and non–financial) in relation to sustainable development was published in 1998, so the period of this research is from 1998 to April 2022. As in the first step of the research, most papers are articles (regarding the first step it was 882 articles, in the second step of research: 285 articles).

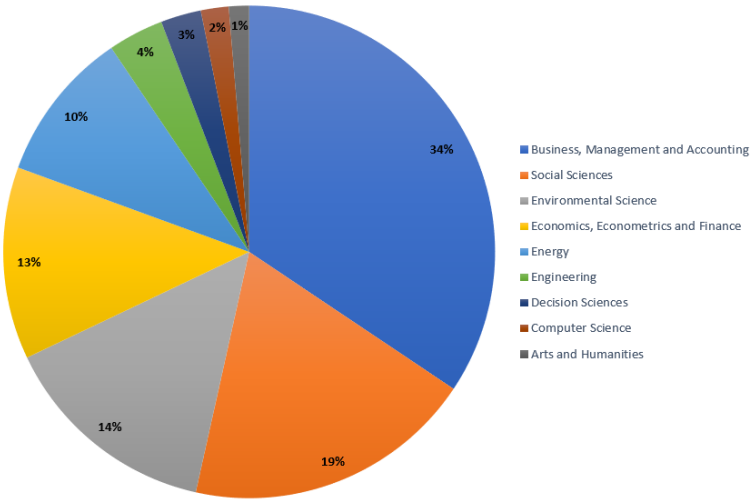
Figure 7. Documents by type investigating financial and non-financial reporting and its connection to sustainable development in the Scopus database (1998-April 2022)



Source: Own survey.

The research area of the research that explores financial and non-financial reporting and its connection to sustainable development regards the period from 1989 to April 2022, and includes various subject areas (Figure 8). Figure 8 presents the documents by subject area exploring the financial and non-financial reporting and its connection to sustainable development in the period from 1998 to April 2022 in the Scopus database. Most of the papers belong to the subject area of Business, Management and Accounting, Social Sciences, Environmental Science, Economics, Econometrics and Finance, Energy, Engineering, Decision Sciences, Computer Science, and Arts and Humanities. Other areas have fewer than 10 papers regarding financial and non-financial reporting and its connection to sustainable development. Linked to the data of the first step of research, and the area that deals with and explores financial and non-financial reporting and its connection to sustainable development is yet again the area Business, Management, and Accounting, just as in the first step of the research results.

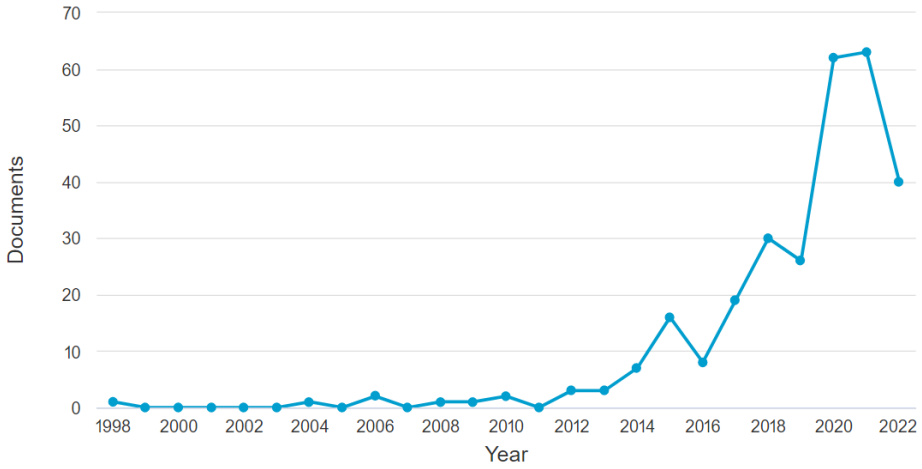
Figure 8. Documents by subject area exploring the financial and non-financial reporting and its connection to sustainable development in the Scopus database (1998-April 2022)



Source: Own survey.

The number of papers that investigate financial and non-financial reporting and its connection to sustainable development has again increased substantially in 2021 (63 papers). A growing trend is noticeable in 2018 (30 papers), 2019 (26 papers), 2020 (62 papers), 2021 (63 papers), and April 2022 (40 papers) (Figure 9).

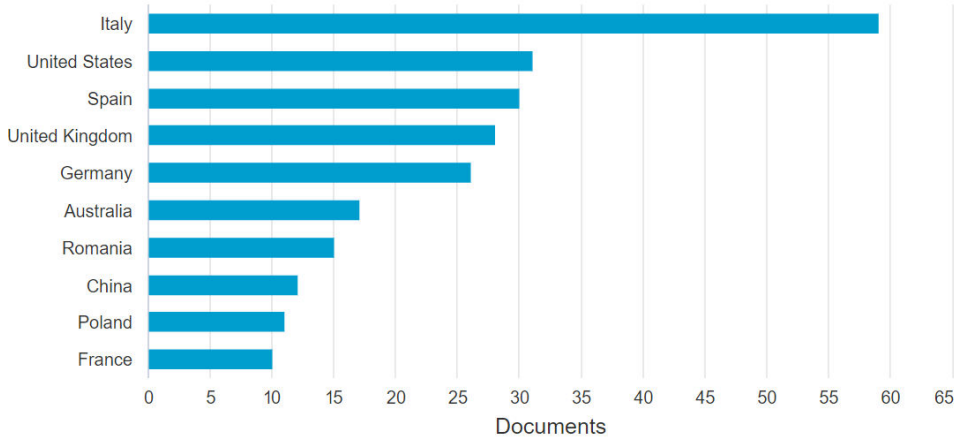
Figure 9. Number of papers investigating financial and non-financial reporting and its connection to sustainable development in the Scopus database (1998-April 2022)



Source: Own survey.

Most of the research papers were from Italy (59), the United States (31 papers per country), Spain (30 papers per country), the United Kingdom (28 papers per country), Germany (26 papers per country), Australia (17 papers per country), Romania (15 papers per county), China (12 papers per country), Poland (11 papers per country), and France (10 papers per country). Other countries that explore research areas have fewer than 10 papers per country (Figure 10).

Figure 10. Country of origin of the authors investigating financial and non-financial reporting and its connection to sustainable development in the Scopus database (1998-April 2022)



Source: Own survey.

Figure 11 presents the journals that published the papers investigating financial and non-financial reporting and its connection to sustainable

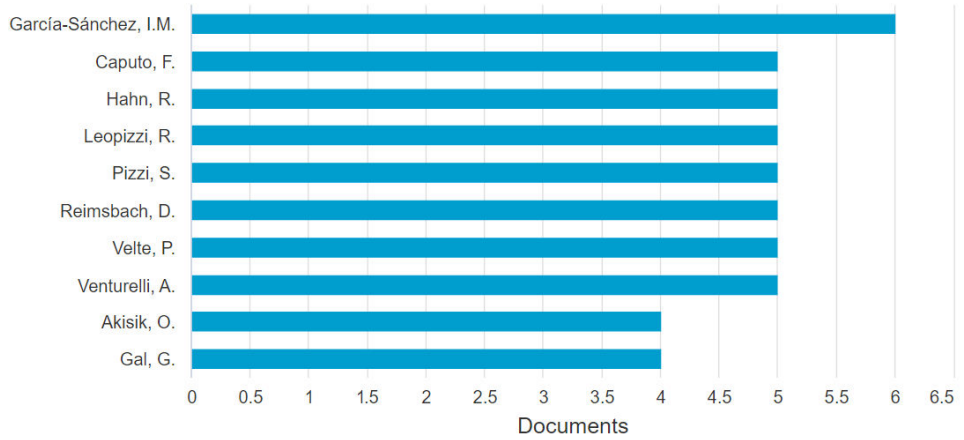
development in the period from 1998 to April 2022 in Scopus. As seen in Figure 11, the growing trend of papers started in 2008, having increased since 2020, when 14 documents regarding financial and non-financial reporting and its connection to sustainable development were published in 2020 in the journal Sustainability Switzerland. The largest number of papers were published in Sustainability Switzerland (36 papers), Business Strategy and the Environment (16 papers), Corporate Social Responsibility and Environmental Management (12), Journal of Applied Accounting Research (12 papers), and Sustainability Accounting Management and Policy Journal (11 papers). Other journals have published ten or fewer papers on the research topic. Linked to the data of the first step of research, the journal that deals with and explores financial and non-financial reporting and its connection to sustainable development, is yet again Sustainability Switzerland, just as in the first step of the research results.

Figure 11. The journals that published the papers investigating financial and non-financial reporting and its connection to sustainable development in the Scopus database (1998–April 2022)

Source: Own survey.

Regarding authors who deal the most with the research topic and explore financial and non-financial reporting and its connection to sustainable development are García-Sánchez, I.M (6 papers), Caputo, F., Hahn, R., Leopizzi, R., Pizzi, S., Reimsbach, D., Velte, P., and Venturelli, A. (each author has 5 papers). In addition, Akisik, O., and Gal, G. eachhave 4 papers. Other authors have fewer than 4 papers that explore financial and non-financial reporting and its connection to sustainable development (Figure 12). The author who researches financial and non-financial reporting, also connecting it with sustainable development is García-Sánchez, I.M, who also appears in the first step of the research.

Figure 12. Documents by the authors investigating financial and non-financial reporting and its connection to sustainable development in the Scopus database (1998–April 2022)



Source: Own survey.

The presented research results are divided into two parts. The first part of the research presents data related to financial and non-financial research, and the interest of researchers in this field in the period between 1993 and April 2022, when the first research covering this topic appeared. The second part of the research presents data that combines financial and non-financial reporting with sustainable development in the period from 1998 to April 2022, when the first document linked to this topic appeared. It is evident that a large number of researchers are engaged in financial and non-financial research, but not enough researchers recognize the importance of financial and non-financial reporting for the sustainable development of the organization, as shown by insufficient data and an insufficient focus in this direction.

DISCUSSION AND IMPLICATIONS

This paper presents the theoretical concepts and importance of financial reporting, non-financial reporting, and sustainable development. We can say with certainty that there is a strong connection between the process of financial and non-financial reporting and sustainable development, i.e. quality and transparent reporting contributes to the sustainable development of the organization, although the area is still insufficiently explored. The paper presents an analysis of data from the Scopus database and shows the trend from 1993 to April 2022 related to financial and non-financial reporting, and the trend from 1998 to April 2022 related to the relationship of financial and non-financial reporting with sustainable development (the analysed years were taken into account as the beginning of the research in the mentioned area). The presented data show that the intensive growth and interest in research on this topic began in 2018, both for research on the process of financial and non-financial research and the research that links it with sustainable development. From the aspect of financial and non-financial

reporting research, the top three countries that explore the research topic the most are (1) the United States, (2) Italy, and (3) the United Kingdom. The top three journals that publish the most on research topics are (1) Sustainability Switzerland, (2) Journal of Applied Accounting Research, and (3) Business Strategy and the Environment, while the top three authors are (1) Cormier, D., (2) Raimo, N., and (3) Vitolla, F.

The top three countries that in their research link financial and non-financial reporting to sustainable development are (1) Italy, (2) the United States, and (3) Spain. The top three journals that have published the link between financial and non-financial reporting with sustainable development are (1) Sustainability Switzerland, (2) Business Strategy and the Environment, and (3) Corporate Social Responsibility, while the top three authors are (3) García-Sánchez, I.M., (2) Caputo, F., and (3) Hahn, R. What we can conclude from the review of the presented research data is that the same countries (the United States and Italy) and the same journals (Sustainability Switzerland, and Business Strategy and the Environment) appear in both areas of the presented research data, while the authors studying this topic do not overlap in the first and second step of research. One group of authors studies financial and non–financial reporting, and the other group of authors studies financial and non–financial reporting and its connection to sustainable development. The only author who studies both areas but is not among the top three authors in the area of financial and non–financial reporting is García-Sánchez, I.M.

Based on the data presented in both areas of our research, the Republic of Croatia and its neighboring countries (Slovenia, Bosnia and Herzegovina, Serbia, and Montenegro) do not appear as countries that study and explore this topic. The topic of our research through this paper and the review of the analyzed data is the basis for expanding the same research and an even deeper analysis and the link between financial and non-financial reporting with sustainable development. Databases other than Scopus were not compared in this paper, which is a recommendation for further research in this direction and consolidation of data from other databases, their analysis and connection. This area of research needs more empirical evidence, theoretical and quantitative evidence, and is an area for much further research.

CONCLUSION

This study was designed to survey articles on financial and non-financial reporting and its connection to sustainable development in peer-reviewed journals listed in the Scopus database. The research in question comprised of a range of a total of 1.167 papers (882 of them regarding financial and non–financial reporting, and 285 of them regarding financial and non–financial reporting and its connection to sustainable development) published over a period of 29 years (from 1993 to 2022). This mapping considered a literature overview and had scope to review the current state and efforts of researchers in this area. The findings of this research indicate that the impact

of financal and non-financial reporting in the function of sustainable developmnet is on the verge of disrupting current corporative reporting and will have an effect on corporate reporting. This is the research area that needs more empirical evidence, theoretical and quantitative evidence, but also presents baseline for future research. This research contributes to strengthening the awareness among researchers and practitioners about review of important areas of research topics (documents by type, documents by subject area, documents by year, documents by country/territory, documents per year by source, documents by author) regarding financial and non–financial reporting and its connection to sustainable development. Most of the papers analysed gave a theoretical point of view on the analysed problem, which points to the need for even greater efforts and research in this area. The main question for researchers and managers remains how to integrate, compare and manage both financial and non–financial reporting in the function of sustainable development. In such a context, organizations will have to adapt non–financial reporting with current financial reporting as an obligation in order to gain competitive advantage on the market, and to ensure transparent, comparable, accurate and reliable information necessary for company management. This can achieve the maximum effect based on their interaction and can lead to company-sustainable development. Non-financial reporting has developed into reporting that presents a challenge to any company, primarily due to differences in managerial views on the usefulness of conducting such business practices. The goal in the future is to achieve harmonization at the level of non-financial reporting (as is the case with financial reporting) in order for non-financial reporting to fulfil its purpose.

Moreover, even though one of the most reputable scientific databases (Scopus) was consulted, there may have been relevant studies and papers that were not indexed in the abovementioned database, which would have otherwise enriched the study. This research gives a brief overview of a researched field that is actually insufficiently explored through the scientific literature, and presents a wide area for further researchers.

In conclusion, economic development and growth, as well as the globalization and internationalization of society and markets, cannot be stopped, however it is necessary to think in the direction of ensuring a healthy society and a quality economy that will have less harmful effects on the environment. Therefore, sustainable development is undoubtedly one of the key elements in formulating and implementing development policies in the world. A quality and transparent reporting process (financial and non-financial) contributes to sustainable development. The business policy of the company today should be directed towards the system of sustainable development and balance of company management through the cooperation of a dynamic business and economic activities of the system, and in cooperation with the essential information and data provided by the reporting process (financial and non-financial).

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LONGITUDINAL STUDY OF SMALL AND MEDIUM ENTERPRISES AND FAMILY BUSINESSES IN AN EMERGING MARKET

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Abstract

In our paper, we analysed a longitudinal survey of Hungarian small and medium-sized enterprises (SMEs) and family businesses (FBs). We included a nationally representative, repeated cross-sectional (RCS) sample. We sought to analyse and answer the question of which trends can be detected in four segments (ownership structure, revenue, problem perception, and succession), and whether these trends are similar for SMEs and FBs. We used Grow Curve Modelling and Hierarchical Linear Models (GCM-HLM) to analyse the data. Our results shows that the ownership structure describes a different trend in the case of SMEs and FBs: the former shows a negative trend line, while the latter shows a positive trend line. Although, for sales revenue and sales, in the case of detection of problems, the SMEs and the FBs both can be characterised by an increasing trend line, and no change can be detected in the preparation for succession for either SMEs or FBs.

Key Words

Longitudinal study; SMEs; family businesses; emerging market; Grow Curve Modelling; Hierarchical Linear Models.

INTRODUCTION

Small and medium enterprises (SME) and family businesses (FB) represent the majority of companies and are an important source for the generation of jobs in most countries (Cadbury, 2000; Fattoum & Fayolle, 2009; Hacker & Dowling, 2012; Hoy & Sharma, 2010; Kellermanns, Eddleston, Barnett, & Pearson, 2008, Kuratko & Hodgetts, 2004; Mazzarol, 2006; Ramadani, Fayolle, Gerguri, & Aliu, 2013). The importance of these businesses to a country's economy is substantial.

Family businesses differ from SMEs in many ways (Dunn, 1995; Hoy & Sharma, 2010; Jorissen, Laveren, Martens, & Reheul, 2005; Mandl, 2008). The centre of the firm in family businesses is family, which formally or informally, directly or indirectly influence the firm; their main objectives are both economic and non-economic, respectively sustainability/ long-term family income (stability) as well as family satisfaction; their business orientation is satisfaction of internal and external stakeholders (mainly family, clients, employees, local community); the style of management is value-driven, emotional and goal alignment, they compete on quality, reputation, long-term relationships. Carlock and Ward (2001) described a family business as a scale which should be balanced between the requirements and business opportunities and the needs and desires of the family. Based on this research a very important issue raised recently is whether the family business should be "family business" during the whole its life cycle or not. Mandl (2008) noted that the status of being a family business must not be considered "fixed". According to her, there are several businesses that are family businesses over their whole life cycle. On the other hand, there are businesses which could be 'transferred' over their life cycle from family business to non-family business and vice-versa.

In our study, we investigate this possible transformation between family and SME businesses. We consider it important to examine how can we distinguish between family businesses and SMEs in Hungary regarding the three components (ownership structure, volume of sales and problems or challenges). Although the family business shares values and characteristics with other business entities, like SMEs it confronts unique challenges. The parent-founder faces numerous challenges, including balancing equity with efficiency, succession with merit, and paternalism with agency. Even if there is a far-reaching overlap between the two categories, the part of the literature that specifically focuses on the research of family businesses is expanding. More and more attention is paid to family business research and we would like to contribute to this literature with our paper.

To capture these possible differentiations, we conducted a longitudinal study. Although, a relatively small number of longitudinal analyses have been performed among small and medium-sized enterprises (SMEs) and family businesses (FBs). In our analysis, we primarily aim to address this gap. Aken et al. (2017) conducted one of the most prominent international longitudinal analyses in recent years and found that different governance mechanisms may be interchangeable for SME firms. Alshibani and Volery's (2021) study, Wu's (1996) longitudinal study on the Chinese market, and

Kok's (2014) European longitudinal study have shown that SMEs present a growing role in job creation in the economy in the long run.

Although there is little longitudinal research on SMEs, the research about family businesses is even meagre. Two-thirds of the world's private companies are family-owned, and their scientific research is on the rise (Heras-Rosas & Herrera, 2020). Nonetheless, there has been little longitudinal analysis on family businesses. Numerous research has measured on comparative data, either qualitatively or quantitatively (Hisrich-Fülöp, 1997), and found that FBs play a prominent role in the SME sector both in terms of volume and impact, these results were not examined on time series data. For example, within the Hungarian SME sector, family businesses account for 60-70% (Hisrich-Fülöp, 1997) of the total number of SMEs. The business segments of FBs are significantly intertwined, like the ownership and management (Hisrich-Fülöp, 1997), which in the case of SMEs, is separated, thus the business life cycle of FBs is different from SMEs (Gersick et al., 1997).

Gersick et al. (1997) define family business as the one where at least 51 per cent of the business is owned by a family and the family is involved in the management of the business or the transfer of ownership takes place in part or in full within the family. However, researchers often use a second definition for FBs, which applies to all the above-mentioned criteria except for the subjective self-classification, i.e., the enterprise does not have to consider itself as a family business (Gersick et al., 1997). In our analysis, we examined both definitions and found that the classification according to the first definition fits better to our data.

In our paper, the comparison of SMEs and FBS is made along the dimensions that show the largest differences. Thus, we analysed the ownership structure, revenue streams, and problem perception, and succession issues. The aim of this research is to examine which changes took place between 2017 and 2020 in different economic dimension of Hungarian SME sector, and whether these changes describe different trend lines for SMEs and FBs.

METHODOLOGY AND DATA

Statistics have been dealing with longitudinal analyses for more than 150 years (Lebo & Weber, 2015). During the long history of the method, the boundary conditions necessary for longitudinal analysis of a data set have been developed. Three such basic conditions (meta-conditions) must be met (DeBoef & Lin, 2004): (a) multiple measurements must be made at intervals that can be clearly separated from each other, as classical panel tests are reliable from 40 (t-time) measurements, in which case quadratic, i.e. non-linear correlation patterns can be detected; b) the data recorded at different times must answer the same question(s); and c) the sample size must be the same, according to a measurement aspect.

In our research, we gathered data in two waves (2017 and 2020), and hence, our data do not meet the criterion of a minimum of 40 measurement

dates. Therefore, it is important to note that the level of validity of our analysis does not reach the level of validity of classical panel studies. Thus, our data is inadequate for quadratic correlation analysis. In addition, the second meta-condition was also violated, as the two surveyed questionnaires differed at several points. Some of the questions asked remained the same, while additional questions were added to the questionnaire in the second wave. This caused a high rate of data loss during data matching. Finally, the third meta-condition of a classical panel analysis became impossible due to the GDPR regulations; therefore, we could not question the same respondents in both waves. Consequently, our longitudinal sample can be methodologically classified into repeated cross-sectional (RCS) sample selection.

The structure and analysis of repeated cross-sectional studies (RCS) vary from panel studies, i.e., aggregated cross-sectional time series studies (PCSTS), as cross-sectional units appear only once in the data. Today, however, a number of large-sample analyses are being conducted with an RCS sample, such as the U.S. NAES surveys, CBS/NYT polls, full ICPSR survey, Gallup surveys, and Michigan consumer surveys (Clarke et al., 2005; Hopkins, 2012; Lebo et al., 2007; Lebo & Weber, 2015; Segal & Spaeth, 2002; Wood, 2009).

For RCS analyses, similar to PCSTS analyses, autocorrelation is one of the biggest statistical challenges. However, general solutions, such as differentiation or the use of the “lagging” dependent variable method cannot be applied to RCS since the delay performed in ti results in a logical pitfall. Nonetheless, a multilevel modelling framework has also been developed for RCS samples (Lebo & Weber, 2015). For multilevel models, RCS data can be examined at the aggregate and individual levels. In the aggregate case, most research simply collects observations from all time and aggregates data by subperiods (e.g., Blaydes & Chaney, 2013; Jerit & Barabas, 2012; Moy et al., 2006; Romer, 2006; Stroud, 2008), in which case the observations are treated as if they had been taken in a single cross-section. However, this method has its limitations. It is evident that individual-level analyses can be omitted as an alternative, as seen in the research of Box-Steffensmeier (2009) and DeBoef and Lin (2004); however, significant interpretation error can be observed with this method.

Hence, we used two commonly used analysis methodology for RCS samples, i.e., the Grow Curve Modeling (GCM) and the Hierarchical Linear Models (HLM). Our results are, therefore, based on a GCM-HLM modelling, to which test statistics were provided by repeated measures of ANOVA tests.

A multilevel model of change, also known as growth curve modelling (GCM), is a flexible and efficient method for analysing longitudinal time series data. There are a number of important and comprehensive literature that describe the method in detail (Bryk & Raudenbush, 1987, 1992, 2002; Lindenberger & Ghisletta, 2004; Rogosa & Saner, 1995; Singer & Willett, 2003; Snijders & Bosker, 1999); hence, we only highlight the most important features of the method. The GCM contains four types of variables: the measure of the outcome variable, the measure of time, the predictor of variable changing in time, and one or more time-invariance predictors. The

outcome variable is usually a dependent variable of the variables changing in time, the value of which can be measured at each time point (Singer & Willett, 2003). Time-varying predictors are also included in the model as independent variables. The Level 1 model for GMC provides the estimated value of the outcome variable in the population, which is assumed to be the aggregate result of the effect of predictors on changes over time within population units. Following the notation of Singer and Willett (2003), the equation of this model with two variable predictors is as follows:

$$Y_{ij} = \pi_{0i} + \pi_{1i}\mathrm{TIME}_{ij} + \pi_{2i}X_{2ij} + \pi_{3i}X_{3ij} + \varepsilon_{ij}$$

Where Yij is the estimated result for person i at time j, TIMEij is the value of time for person i at time j, X2 and X3 are the two time-varying predictors within the predictive person, π0i (initial state) is Y when time is zero, and both time variable predictors are zero, π1i (rate of change) is the slope of the linear line of person i, π2i is the unique effect of X2 on Y, π3i is the unique effect of X3 on Y, and finally, εij is the error expression within-person. The standard deviation of this error theorem is estimated in the model.

For the second level of the GCM model, the estimated parameters are the outcome variables of the new equations, in which the time-invariant variables are the predictors. For example, one possible system of equations for the Level 2 model based on Singer and Willett (2003) is as follows:

$$\pi_{0i} = \gamma_{00} + \gamma_{01}F_i + \zeta_{0i}$$
$$\pi_{1i} = \gamma_{10} + \gamma_{11}F_i + \zeta_{1i}$$
$$\pi_{2i} = \gamma_{20} + \gamma_{21}F_i + \zeta_{2i}$$
$$\pi_{3i} = \gamma_{30} + \gamma_{31}F_i + \zeta_{3i}$$

In this model, F (Female) is a dummy variable (code, female: F = 1 male: F = 0). Level 2 γ00, γ10, γ20, and γ30 are the estimated values of the four Level 1 predictors, i.e., π0i, π1i, π2i, and π3i, when all time-invariant predictors are zero. In our example, only one time-invariant predictor was used, and the value of F was 0, therefore γ00, γ10, γ20 and γ30 represent the effect of gender. The model can be extended with additional interpersonal variables, and with their estimated effects, they will provide a similar interpretation. The error terms ζ0i, ζ1i, ζ2i, and ζ3i represent individual differences in Level 1 parameters that are not explained by Level 2 predictors. The model also estimates the standard deviations and covariances of these error terms.

In summary, the goal of GCM statistical modelling is to find the model that best fits the data. Typically, we test a series of models to test whether there is sufficient variability in the data over time. If variability is met for time as a prerequisite, further model building may take place, involving additional predictor variables (Cillessen & Borch, 2006). GCM offers several benefits. First, it allows researchers to simultaneously examine the way measured data relate and change at the aggregate and individual levels. Second, GCM techniques estimate the time velocity of the average change in the sample as well as the variability of the change within the sample. Third, GCM can specifically assess and model the standard deviation of measurement errors at a given time point (Preacher et al., 2008), and finally, GCM can reduce

the biases caused by the dropout rate known in longitudinal studies (Curran et al., 2010).

As our data were recorded at two time points, they are clearly only capable of detecting linear change. Thus, we have incorporated Hierarchical Linear Modeling (HLM) into our model, allowing us to use a better method of analysis to fit our data structure. HLM complements GCM analysis by supplementing multilevel conceptual models with linear analysis of nested data (Bryk & Raudenbush, 1992, 2002; Klein et al., 1994; Ozkaya et al., 2013; Arregle et al., 2006; De Leeuw, cited in Raudenbush & Bryk, 2002). HLM allows us to capture the effect of higher-level constructs on lower-level constructs, highlighting the complex relationships between them (Hofmann, 1997; Bryk & Raudenbush, 1992). HLM can also effectively manage data aggregation and separation (Magnusson et al., 2011), which has been a critical consideration for our data structure. Thus, the HLM technique also provides a solution for how to involve individuals who did not participate in one of the data collection (a fundamental issue for RCS samples) or, for example, how to combine data from individuals tested at different ages in different samples (Woltman et al., 2012; Helson et al., 2002; Alder & Scher, 1994). HLM in longitudinal studies flexibly handles data collection irregularities, which is beneficial for our study (Osgood & Smith, 1995).

During the matching process of our longitudinal database, we merged our databases along three fixed variables: the family business variable, the region variable and the economic sector variable. Coupling occurred only when all three fixed variables depicted the same values in both waves.

As a result of the sequential matching process, our longitudinal database has a total of 526 items, which means that we have managed to match 263 businesses from the first wave to the data recorded in the second wave. This implies that in the first wave, the drop-out rate was 31%, while in the second wave, the drop-out rate was 47%. In the case of the questioner questions, we managed to pair a total of 37 questions from both questionnaires, which were divide into 12 topic blocks, resulting in a total of 81 fitted variables. The distribution of these variables is summarized in Table 1.

Table 1: Statistics on the distributions of the variables in our longitudinal database

	2017	**2020**	**Longitudinal**
Total number of questions	37	37	37
Number of blocks	12	12	12
Basic variables	4	4	8
Ownership structure	13	13	26
Business management	6	6	12
Employees	13	13	26
Family business	2	2	4
Succession	8	8	16
Trainings	2	2	4
Innovation	5	5	10
Social sustainability	11	11	22
Finance	2	2	4
Media Orientation	5	5	10
Problems	10	10	20

TOTAL	**81**	**81**	**162**

Source: Own survey.

In order to compare FBs and SMEs, we developed a subsample of family businesses that includes businesses that see themselves as a family business and at least 51 percent of the company is owned by a family, the family participates in the family business in the management of the business, the members of the family participate in the operation of the business as employees, or the transfer of management and ownership takes place, in whole or in part, within the family. Based on this definition, the subsample of our family business contained 205 items.

HYPOTHESES

In our research, we tested eight hypotheses related to SMEs and FBs to examine how can we distinguish between family businesses and SMEs in an emerging market. Based on the literature we focused on those three dimensions that show the differences between the two market entities. We examined the ownership structure as one of the core determinants of the success of family businesses (Miller, Le Breton-Miller, & Lester, 2011). Research has shown ownership to be of importance for the strategic development and long-term survival of family businesses (Zahra, 2003; Anderson & Reeb, 2003; Miller & Le Breton-Miller, 2005), and it is a complex phenomenon that constitutes dimensions beyond the juridical and financial aspects of ownership. Ownership is considered by the literature to be one of the basic characteristics that differentiates FBs and SMEs. Therefore we examined to what extent and in what direction did the ownership structure of Hungarian SMEs and FBs change between 2017 and 2020? Moreover, what factors will influence the ownership structure of Hungarian SMEs and FBs in 2017 and 2020? Based on these research questions, our hypotheses became the following:

H_1: In the case of Hungarian SMEs and FBs, no change in the ownership structure can be detected between 2017 and 2020.
H_2: Ownership structure of SMEs and FBs can be explained by the same variables in the two waves mainly the business subjective classification and the succession strategy.

Apart from ownership and succession we examined two additional dimensions (volume of sales, and problems / challenges). We include the analysis of volume of sales in our research because in an emerging market this factor has a far-reaching effect on the economic perspective of the companies. For this reason, it can be identified as an important factor when comparing companies (Arnold & Quelch 1998; Dawar & Chattopadhyay 2002). Our research questions aimed at finding out to what extent and in what direction did the volume of sales revenue of Hungarian SMEs and FBs change between 2017 and 2020? Moreover, what factors influence the

development of the sales volume of Hungarian SMEs and FBs in 2017 and 2020? Based on these research questions, our hypotheses became the following:

H_3: In the case of Hungarian SMEs and FBs, no change in the volume of sales revenue can be detected between 2017 and 2020.
H_4: Sales of SMEs and FBs can be explained by the same factors in the two waves, namely the financial situation of the company, the number of employees of the firms, the training and development opportunities for the employees and the value of export.

In our paper, we thought it important to address the question of how FBs and SMEs evaluate and see the socio-economic context. What are the areas that are perceived as problems or challenges, and how much have these areas changed over the years. We also cover what factors are responsible for these perceptions. Our hypotheses were as follows:

H_5: In the case of SMEs and FBs in Hungary, no change can be detected in the case of mentioning problems / challenges between 2017 and 2020.
H_6: Problem perception of SMEs and FBs can be explained by the same factors in the two waves.

Approximately one-third of the family business literature is devoted to succession issues (Sharma, Chua, & Chrisman, 2000, p. 234). Furthermore, according to several authors and consultants, one of the main reasons (if not the single most important reason) for the high failure rate among first- and second-generation family businesses is their inability to manage the complex and highly emotional process of ownership and management succession from one generation to the next (Magretta, 1998; Matthews et al., 1999). As the succession strategy is also a key factor to distinguish between FB and SMEs. Based on that our research questions aimed to examine to what extent and in what direction did the issue of succession for Hungarian SMEs and FBs change between 2017 and 2020? Moreover, what factors influence the development of succession in the case of Hungarian SMEs and FBs in 2017 and 2020? Based on these research questions, our hypotheses became the following:

H_7: In the case of SMEs and FBs in Hungary, no change can be detected in the case of the issue of succession between 2017 and 2020.
H_8: The succession of SMEs and FBs can be explained by the same factors (orientation, and ownership structure) in the two waves.

COMPARATIVE TREND ANALYSIS OF SMES AND FBS

We performed a comparative study of SMEs and FBs on longitudinal data by employing the ownership structure, sales revenue, perception of problems, and the issue of succession.

To examine the change in ownership structure, we analysed the change in private ownership in the total sample and the change in family ownership in the family business subsample. Repeated measure ANOVA testing was used as a prerequisite for the study to test whether the data structure in both the SME and Family Business sample was appropriate for subsequent GCM-HLM modelling (Appendix Tables 1 and 2). The values of the different multivariate tests are significant for both samples, and hence, the means in the two waves are significantly different. The epsilon value for the test, which examines the null hypothesis that the error covariance matrix of orthonormalized transformed dependent variables is proportional to an identity matrix, is also significant in both cases (.000, .000) and shows a value close to 0.1 (.0997, .0987). In addition, the ANOVA analysis shows a significant value that a linear trend can be detected between the data points (.000, .000), as well as the value of the partial Eta1 belonging to the linear trend, which shows a sufficiently low value (.114, .112). This depicts that there is a significant difference and a linear trend in the variable measuring ownership structure in the SME and family business sectors.

In the GCM-HLM analysis, we used a scaled identity matrix to capture the variances using the variables measuring the share of ownership (private ownership in the case of SMEs and family ownership in the case of family businesses) as the dependent variable. In our GCM-HLM analysis, we used the time variable as a predictor variable (fixed effect) and allowed the comparison of the averages along the waves, as well as the intercept value, which helped us to transform the initial values of the cases to X = 0. Moreover, we worked with a random effect based on the number of cases, i.e., we allowed our HLM model to calculate variances at the individual level, for which we used unstructured covariance and calculated with Restricted Maximum Likelihood (REML) in the HLM methodology.

It can be seen from the table of fixed effects (Table 2) that the average of the variable for SMEs in 2017 was 91.802 (+ - 1.524), which was associated with a statistically significant (.000) linear value of -14.508 (+ - 2.480) in 2020. This means that the average of the variable shows a decrease of -14.508 between 2017 and 2020. In the case of family businesses, however, the average of the variable in 2017 was 86.04 (+ - 1,662), accompanied by a statistically significant (.000) linear increase of 8,502 (+ - 1,949) by 2020.

Based on the differences at the individual level, which can be read from the table of covariance parameters, the values measured at level 1 (602.23 + - 69,958, 309.38 + - 32,498) are also significant for SMEs and family businesses (.000). However, the measured value for level-2 is not always significant. For the value, the variance of the intercept (UN 1,1), the variance of the line (UN 2,2), and the covariance between the two (UN 2,1) were

[1] Multivariate tests can be used to test the significance of the deviation of the means. A Wilks' Lambda p-values are significant (.000), Hotelling's Trace test value (.000) as well as Roy's Largest Root (.000) and Pillai's Trace value (.000). Thus, based on multivariate tests, the means of the variable show a significant difference. In addition, for the Sphericity Assumed test, which shows covariance differences between different time points, a significant value (.000) is also obtained, which also confirms that significant differences can be detected between the averages measured in the two waves of the variable.

calculated. The value of the intercept for SMEs is 8.775, which is insignificant, the value of the straight line is 413.736, which is also not significant, and finally, the value of the covariance between the two is -60.204, which is also insignificant. In the case of family businesses, the value of the intercept is significant at 257.450, the value of the straight is insignificant at 150.655, and finally, the value of the covariance between the two is -196.79, which is significant.

This implies that at the individual level, enterprises differ from the average trend in the average for SMEs; however, they do not differ for FBs.

Table 2: GCM-HLM results for ownership structure of SMEs and Family Businesses

Estimates of Fixed Effects[a]							
						95% Confidence Interval	
Parameter	Estimate	Std. Error	df	t	Sig.	Lower Bound	Upper Bound
Intercept	91.802281	1.524212	255.406	60.229	.000	88.800657	94.803906
time	-14.508667	2.480494	267.518	-5.849	.000	-19.392440	-9.624893

Estimates of Covariance Parameters[a]							
						95% Confidence Interval	
Parameter		Estimate	Std. Error	Wald Z	Sig.	Lower Bound	Upper Bound
Repeated Measures	Variance	602.231697	69.958535	8.608	.000	479.604636	756.212491
Intercept + time [subject = id]	UN (1,1)	8.775914	75.049327	.117	.907	4.613592E-7	166934279.519158
	UN (2,1)	60.204463	56.813273	1.060	.289	-51.147505	171.556432
	UN (2,2)	413.736600[b]	.000000	.	.	.	.

Estimates of Fixed Effects[a]							
						95% Confidence Interval	
Parameter	Estimate	Std. Error	df	t	Sig.	Lower Bound	Upper Bound
Intercept	86.048780	1.662843	249.223	51.748	.000	82.773764	89.323797
time	8.502009	1.949351	282.588	4.361	.000	4.664918	12.339101

Estimates of Covariance Parameters[a]							
						95% Confidence Interval	
Parameter		Estimate	Std. Error	Wald Z	Sig.	Lower Bound	Upper Bound
Repeated Measures	Variance	309.384085	32.498577	9.520	.000	251.817181	380.111126
Intercept + time [subject = id]	UN (1,1)	257.450627	46.992488	5.479	.000	180.021366	368.183104
	UN (2,1)	-196.790673	32.372894	-6.079	.000	-260.240379	-133.340966
	UN (2,2)	150.655293[b]	.000000	.	.	.	.

Source: Own survey.

Thus, in the case of enterprises, the share of private ownership in the ownership structure in 2017 and 2020 follows a declining trend, but enterprises may deviate from this trend at the individual level. In contrast, in the case of family businesses, we can show an increasing trend in the case of family property, from which FBs do not differ significantly at the individual level.

We do not have enough information with respect to 2017 data to explain the change for SMEs and FBs, as no correlation can be detected with other variables. However, in the 2020 data, the ownership structure for SMEs correlated with three variables: family ownership ratio (.257**), family business subjective judgment (-.227*), and succession strategy (-.175*). In the FB sample, the variable correlated with two variables: the private ownership ratio (.237**) and the succession strategy (-.145*). However, in both cases, the variables were not fit into an OLS model. Hence, a stochastic explanation of the probable causes of the changes in the statistical sense cannot be given based on the present database.

In the following, we move on to the analysis of the data from the point of view of sales revenue. With all this, we analyse the change in the financial performance of SMEs and FBs on time series data. For our analysis, we repeatedly used ANOVA as a test statistic, based on the results of which it can be concluded that for both SMEs and FBs, a significant difference and a linear trend can be detected in the two waves in the variable measuring annual sales volume (Tables 3 and 4 in Appendix).

In the GCM-HLM analysis, we used the settings already described for the ownership structure to build our model. As a dependent variable, we used a five-value variable measuring annual sales revenue (1 = 50-100 mHUF, 2 = 100-300 mHUF, 3 = 300-500 mHUF, 4 = 500 mHUF - 1 billion HUF, 5 = more than 1 billion HUF). In the case of the GCM-HLM results, the table of fixed effects shows that in 2017, the average of the variable for SMEs was 3.07 (+ - .077), for which .057 (+ - .088) was a statistically significant (0.000) linear value associated with 2020. For FBs, there was also a significant increase of 1.02 among the variables on average.

Individual-level differences at level-1 are significant, with values of .822 (+ - .078) for SMEs and 1.22 (+ - .15) for FBs. At the individual level, neither SMEs nor FBs deviate significantly from the average trend of the average.

Table 3: GCM-HLM results of sales revenue of SMEs and Family Businesses

Estimates of Fixed Effects[a]							
						95% Confidence Interval	
Parameter	Estimate	Std. Error	df	t	Sig.	Lower Bound	Upper Bound
Intercept	3.076046	.077021	309.517	39.938	.000	2.924494	3.227597
time	.057034	.088616	346.547	.644	.000	-.117258	.231327

Estimates of Covariance Parameters[a]					
Parameter	Estimate	Std. Error	Wald Z	Sig.	95% Confidence Interval

						Lower Bound	Upper Bound
Repeated Measures	Variance	.822689	.078448	10.487	.000	.682447	.991751
Intercept + time [subject = id]	UN (1,1)	.737497	.116405	6.336	.000	.541263	1.004874
	UN (2,1)	-.556385	.095617	-5.819	.000	-.743791	-.368979
	UN (2,2)	.419899[b]	.000000	.	.	.	.

Estimates of Fixed Effects[a]

Parameter	Estimate	Std. Error	df	t	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Intercept	2.170732	.086239	204.000	25.171	.000	2.000697	2.340766
time	1.029268	.122330	204	8.414	.000	.788074	1.270462

Estimates of Covariance Parameters[a]

Parameter		Estimate	Std. Error	Wald Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Repeated Measures	Variance	1.221343	.151877	8.042	.000	.957169	1.558428
Intercept + time [subject = id]	UN (1,1)	.303287	.138193	2.195	.028	.124166	.740806
	UN (2,1)	-.430738	.098413	-4.377	.000	-.623624	-.237851
	UN (2,2)	.625081[b]	.000000	.	.	.	.

Source: Own survey.

Thus, it can be stated that in the case of SMEs and FBs, the volume of annual turnover shows an increasing trend between 2017 and 2020, and enterprises did not deviate from this trend at the individual level.

For both SMEs and FBs, we further analysed by conducting OLS regression on the possible explanations for interpreting the trend line. We built a total of four models; two for 2017 data while the other two for 2020 data. During the development of each model, 14 explanatory variables and sales revenue were included in the model as dependent variables. The stepwise method was used in the model construction.

For SMEs, the explanatory power of the final model in 2017 was 58% (R2 .337), while for FBs, it was 62.2% (R2 .387). The value of the unbiased estimate of the explanatory power of the 2020 models (R2) is .385 for SMEs and .400 for FBs. The value of the F-test for the ANOVA test of the models was significant in all cases (.000), i.e., our models represent a significant part of the total heterogeneity.

In 2017, for SMEs, the final model retained four variables showing significant levels for the t-test (.001, .000, .018, .000). The model retained the variable measuring production for export (Bs value -.169), the negative value of which shows that the more a given enterprise produces for the domestic market, the higher its turnover. The number of employees (Bs. .436) showed that more the people an SME employs, the higher its turnover. The variable of training provided to employees (Bs -.124) shows that the less

an SME provides training to its employees, the higher its sales. Finally, the variable measuring the number of news sources (Bs .204) showed that more the information sources an SME is able to realise, the higher its sales revenue.

For FBs, the final model also retained four variables, the export variable (Bs -.102), the variable measuring the number of employees (Bs. 490), the variable measuring the number of trainings (Bs -.155) and the variable measuring the number of media sources (Bs. 212).

Table 4: OLS regression and t-values

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.922	.412		4.666	.000
	Export	-.444	.135	-.169	-3.294	.001
	Number of employees	.496	.060	.436	8.321	.000
	Training for employees	-.348	.147	-.124	-2.374	.018
	Orientation, how many media sources	.163	.041	.204	3.984	.000

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.520	.426		3.571	.000
	Export	-.265	.146	-.102	-1.821	.040
	Number of employees	.563	.066	.490	8.562	.000
	Training for employees	-.419	.154	-.155	-2.728	.007
	Orientation, how many media ources	.161	.043	.212	3.766	.000

Source: Own survey.

In our 2020 model, we used the same model build as the 2017 model design. For SMEs, the regression algorithm retained three variables in the final model: the market position (Bs .133), which shows that the better the market the higher the turnover of the company; the export variable (Bs -.169), on the basis of which the same conclusion can be drawn as in 2017, and finally, the variable measuring the number of employees (Bs .552), on the basis of which it can be seen that the more employees a company employs, the higher its turnover. In the case of FBs, three variables had a significant effect on the dependent variable: the assessment of the subjective market position (Bs. 132), the export variable (Bs -.131), and the number of employees (Bs. 576).

Table 5: OLS regression t-values of for SMEs and FBs (2020)

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.226	.451		4.932	.000
	Financial situation of the company	.196	.072	.133	2.708	.007
	Export	-.589	.173	-.169	-3.410	.001
	Number of employees	.596	.054	.552	11.114	.000

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.923	.482		3.993	.000
	Financial situation of the company	.188	.078	.132	2.396	.018
	Export	-.446	.189	-.131	-2.367	.019
	Number of employees	.614	.059	.576	10.345	.000

Source: Own survey.

Thus, it can be stated that the sales volumes in 2017 and 2020 can be explained by similar variables for both SMEs and FBs based on our data. Furthermore, in 2017, the turnover of both SMEs and FBs can be explained by the same variables for both SMEs and FBs (exports, number of employees, training for employees, information from several news sources). In 2020, the export variable and the number of employees also demonstrated an important explanatory power for both SMEs and FBs; however, the situation in 2020 is not substantially explained by the number of information channels or training. In contrast, subjective market judgment played a greater role in the explanation. In other words, the annual turnover of SMEs and FBs, which mainly produce for the domestic market and have many employees, has increased in the last four years.

After analysing sales revenue, the types and problems or challenges perceived by businesses and whether there has been a shift in the two waves were assessed. The qualitative responses in the questionnaire were quantified and a distribution table of the variable was developed using the multiply response set method (Table 6).

Table 6: What is the TOP3 thing you would change in your environment?

	2017 SME (%)	**2017 FB (%)**	**2020 SME (%)**	**2020 FB (%)**
Labor force	6,3	6,0	20,4	20,8
Suppliers	6,7	6,8	5,2	5,8
Technology	0,7	0,9	8,1	7,2
Investment	7,2	7,7	7,3	6,2
Regulation	62,5	64,5	14,3	15,3
Grants	4,7	3,4	12,4	12,6
Profitability	4,1	3,0	11,8	12,4

CEO	2,1	1,3	2	1,0
Competitive situation	5,7	6,4	18,5	18,8
Total	**100,0**	**100,0**	**100,0**	**100,0**

Source: Own survey.

Based on the distributions, it can be clearly seen that in 2017, the overwhelming majority (64.5%) of the responses were among SMEs and FBs that would have changed the regulatory environment (reduction of taxes, reduction of bureaucracy). By 2020, however, one of the most important challenges has been to find and employ the right workforce (20.8%), while the fact that over-bureaucratised and high-tax regulations (15.3%) continue to be a major problem for SMEs and FBs in Hungary.

In our analysis, we performed a repeated measure ANOVA for the variable measuring the number of nine-valued problems as a pre-statistic for our GCM-HLM model. The results of the ANOVA test showed a significant difference in the case of SMEs and FBs (Tables 5 and 6 in Appendix).

In the case of both SMEs and the FB sample, the developed GCM-HLM model was built according to the system already presented (Table 7). The table of fixed effects for SMEs shows that the average of the variable in 2017 is 0.88 (+ - .045), and 0.89 (+ - .053) for FB, for which 1.319 (+ - .072) was associated with a statistically significant (0.000) linear value of 1.258 (+ - .081) for FBs by 2020. This implies that the averages of the variables increased for both SMEs and FBs. For individual level differences, the value measured at level-1 is significant for SMEs (.536 + - .061), and for FBs (.509 + - .067) the values are significant in both cases (.000). In the case of level-2 measured values, neither the values of the intersection points nor the values of the straight lines are significant. This means that businesses may deviate from the average trend at the individual average at the individual level, both for SMEs and FBs.

Table 7: GCM-HLM results of SMEs and FBs for problems / challenges

Estimates of Fixed Effects[a]							
						95% Confidence Interval	
Parameter	Estimate	Std. Error	df	t	Sig.	Lower Bound	Upper Bound
Intercept	.889734	.045683	262.000	19.476	.000	.799781	.979686
time	1.319392	.072997	262.000	18.075	.000	1.175656	1.463127

Estimates of Covariance Parameters[a]							
						95% Confidence Interval	
Parameter		Estimate	Std. Error	Wald Z	Sig.	Lower Bound	Upper Bound
Repeated Measures	Variance	.536459	.061221	8.763	.000	.428940	.670928
Intercept + time [subject = id]	UN (1,1)	.012405	.063708	.195	.846	5.273791E-7	291.789357
	UN (2,1)	.026010	.047092	.552	.581	-.066289	.118308
	UN (2,2)	.328499[b]	.000000	.	.	.	.

Estimates of Fixed Effects[a]						
Parameter	Estimate	Std. Error	df	t	Sig.	95% Confidence Interval

						Lower Bound	Upper Bound
Intercept	.892683	.053038	204	16.831	.000	.788111	.997255
time	1.258537	.081429	204.000	15.456	.000	1.097986	1.419088

Estimates of Covariance Parameters[a]

Parameter		Estimate	Std. Error	Wald Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Repeated Measures	Variance	.509743	.067295	7.575	.000	.393529	.660276
Intercept + time [subject = id]	UN (1,1)	.066919	.073609	.909	.363	.007749	.577897
	UN (2,1)	.018016	.054803	.329	.742	-.089396	.125429
	UN (2,2)	.339816[b]	.000000	.	.	.	.

Source: Own survey.

In the case of both SMEs and family businesses, there is a growing trend in the perception of challenges/problems by businesses between 2017 and 2020, and businesses have not deviated from this trend on an individual level. This implies that in four years, the spectrum of problems faced by FBs and SMEs has expanded, albeit slightly.

We do not have enough information to explain the causes of the change either in the case of SMEs or FBs, as we could not fit the variables into the OLS model in either case. Hence, a stochastic explanation of the probable causes of the changes in the statistical sense cannot be given based on the present database. Although, we consider it very important to point out that there have been radical changes in perceptions over the past years. The labor force can be seen as a growing problem. It is likely that this is closely related to the labor shortage that developed as a result of high emigration. An interesting development is the reduction of the problem of regulation. We do not have a clear answer to the reasons for this, but between 2017 and 2020, businesses were not affected by a radical regulatory reorganization, so it can be assumed that the reduction of the problem can be attributed to the lack of this. The increase in grants as a problem is probably due to the decrease in available grant resources. In Hungary, the policy of state centralism can also be observed in the economic sector. All this means that access to grants can be strongly linked to the closeness of relations with the state. The growth of the problem can probably be traced back to the appearance of this problem. The growth of profitability as a problem can also be assumed to be linked to the central role of the state in the market. In Hungary, in the period between 2017 and 2020, the state became an unavoidable economic actor on the market. Orders for the state can be characterized as having a strong market-distorting effect and have a strong influence on which companies receive highly profitable orders and which are forced out of this circle. Presumably as a result of this factor, businesses assessed profitability as a growing problem.

Switching to the analysis of succession time series data, we also used ANOVA as a test statistic, the results of which show that no significant difference and linear trend can be detected in the two waves in the succession variable for both SMEs and FBs (Tables 7 and 8 in the

Appendix). Hence, the degree of presence of the succession strategy between SMEs and FBs did not change between the two waves. This is also supported by GCM-HLM analyses (Appendix Table 9)2.

For both SMEs and FBs, we analysed the possible explanations for the interpretation of the results using OLS regression analysis. We built a total of four models; two for 2017 data while the other two for 2020 data. For SMEs, the explanatory power of the final model in 2017 was 41.1% (R2 .169), while for FBs, it was 43.4% (R2 .188). However, no statistically significant model can be built on the 2020 data for either SMEs or FBs.

For SMEs, the final model for 2017 retained three variables that demonstrate that the significance levels for the t-test are appropriate (.006, .000, .000): the variable from information sources (Bs is .171), which shows that more the news sources that the company is informed about, the more it can be characterised by having a succession strategy; the variable of the spouse as owner (Bs. 229), which shows that the higher the share of the spouse in the company, the more it can be characterized by the SME ownership strategy, and finally the variable of children as owners (Bs .261), based on which it can be seen that the more owners of children in an SME, the more it can be characterised by the succession strategy of the enterprise.

In the case of FBs, the final model retained the same three variables that measured the orientation from the news source (Bs. 190), ownership of the spouse (Bs. 248), and the number of children (Bs. 275).

Table 8: 2017 OLS regression t-values for SMEs and FBs

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.863	.070		40.638	.000
	Orientation, how many media sources	-.063	.023	.171	-2.777	.005
	Owner's spouse as owner	-.279	.075	.229	-3.729	.000
	Owner's children as owner	-.371	.088	.261	-4.233	.000

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.885	.074		38.850	.000
	Orientation, how many media sources	-.069	.023	.190	-2.969	.003
	Owner's spouse as owner	-.301	.078	.248	-3.883	.000
	Owner's children as owner	-.385	.090	.275	-4.298	.000

[2] The mean of the variable included in the GCM-HLM analysis for SMEs was 2.53 (+ - .039), with an increase of .113 (+ - .055), but the value was not statistically significant (0.092). In the case of FBs, an increase of .065 can be detected among the averages of the variable, however, the change wasn't significant (.303).

Thus, it can be stated that the succession in 2017 can be explained by similar variables for both SMEs and FBs. However, no significant model can be established for 2020, and hence, our hypothesis cannot be proved.

As a summary of our results, we present the verification of our hypotheses in Table 8.

Table 8: Summary of hypotheses

Hypothesis	Result	Verification method	Basis of verification
H_1	Not verified	RM ANOVA test and GCM-HLM	Pillai's Trace, p < .001 Wilks' Lambda, p < .001 Hotelling's Trace, p < .001 Roy's Largest Root, p < .00 Sphericity Assumed, p < .0 Greenhouse-Geisser, p < . Huynh-Feldt, p < .001 Sphericity Assumed, p < .0 F-érték, p < .001 t-érték, p < .005, p < .001
H_2	It cannot be verified	OLS Regression	t-érték, p < .005, p < .001
H_3	Not verified	RM ANOVA test and GCM-HLM	Pillai's Trace, p < .001 Wilks' Lambda, p < .001 Hotelling's Trace, p < .001 Roy's Largest Root, p < .00 Sphericity Assumed, p < .0 Greenhouse-Geisser, p < . Huynh-Feldt, p < .001 Sphericity Assumed, p < .0 F-érték, p < .001 t-érték, p < .005, p < .001
H_4	Verified	OLS Regression	t-érték, p < .005, p < .001
H_5	Not verified	RM ANOVA test and GCM-HLM	Pillai's Trace, p < .001 Wilks' Lambda, p < .001 Hotelling's Trace, p < .001 Roy's Largest Root, p < .00 Sphericity Assumed, p < .0 Greenhouse-Geisser, p < . Huynh-Feldt, p < .001 Sphericity Assumed, p < .0 F-érték, p < .001 t-érték, p < .005, p < .001
H_6	It cannot be verified	OLS Regression	t-érték, p < .005, p < .001
H_7	Verified	RM ANOVA test and GCM-HLM	Pillai's Trace, p < .001 Wilks' Lambda, p < .001 Hotelling's Trace, p < .001 Roy's Largest Root, p < .00 Sphericity Assumed, p < .0 Greenhouse-Geisser, p < . Huynh-Feldt, p < .001 Sphericity Assumed, p < .0 F-érték, p < .001 t-érték, p < .005, p < .001
H_8	It cannot be verified	OLS Regression	t-érték, p < .005, p < .001

Source: Own survey.

CONCLUSION

In this paper, we conducted a longitudinal survey of small and medium-sized enterprises and family businesses in Hungary on a national, representative, cross-sectional sample. The businesses were surveyed in two waves, in 2017 and 2020. For our analysis, we used GCM-HLM modelling, for which we ran a repeated measures analysis of variance, as well as analysing the data with the help of OLS regression.

Based on the literature, on the one hand, we examined what changes can be measured between FBs and SMEs in the case of succession and ownership and we supplemented the analysis with value of sales and problem perception, which are important factors of an emerging market according to the literature. Therefore, we sought to answer the question of the extent to which enterprises and family businesses operating in the Hungarian SME sector have changed over the past four years and whether it is possible to find a difference between FBs and SMEs along these dimensions.

The summary table of our trend results is summarised in Table 9, where the increase of the trend is indicated with "+" signal, the decrease of the trend is shown with a "-" signal, while the "0" represents the constant state of the trend.

Table 9: Summary of trend movements

Segment	Subsegment	SMEs	FBs
Ownership structure	Privately or Family owned	-	+
Succession		0	0
Finance and market	Sales revenue	+	+
Problems / Challenges		+	+

Source: Own survey.

Our results demonstrate that Hungarian SMEs and family businesses showed similar movements between 2017 and 2020 in several aspects. However, an important difference in the ownership structure is that while the decreasing trend of private ownership has taken place in the case of SMEs, there has been an increasing takeover of family ownership in the case of family businesses in the last four years. However, we do not have enough data to explain either the 2017 or the 2020 results to give a statistically reliable statement regarding the cause of this trend. Therefore, our results, in line with the literature, support the fact that the ownership structure is an important factor in distinguishing between FBs and SMEs.

The presence of the succession strategy has neither strengthened nor decreased among either SMEs or FBs but has remained constant. We can explain the succession strategy with the same variables for both SMEs and FBs; however, we were unable to establish a statistically significant model for the 2020 data. This allows us to conclude that in the case of the

succession strategy, contrary to the literature, we do not find a sharp dividing line in the case of FBs and SMEs in the emerging markets. This result deserves further research in which it would be worthwhile to include the influence of norms and culture, which we were unable to address during this paper.

In our research, we focused on sales value and the subjective perception of problems. We did all this because both dimensions can be defined as important factors in an emerging market. In the case of both Hungarian SMEs and FBs, the share of annual sales increased between 2017 and 2020. Based on our data, the trend can be explained with the same drivers for SMEs and FBs; however, sales in 2017 and 2020 will be determined by other factors. In 2017, four variables had an impact on sales revenue, exports (negative), number of employees, employee training, and information from multiple news sources. In 2020, the fact that the company and the high number of employees did not produce for export also had an important explanatory power; however, the number of information channels and training did not significantly explain the situation in 2020, whereas subjective market perception played a significant role in the explanation. In other words, the annual turnover of SMEs with a large number of employees producing/providing services to the domestic market and a high number of employees has increased in the last four years, which was not dependent on the training of employees. By 2020, the use of various, diversified news sources was not considered important.

Based on our results, it can also be seen that both in the case of Hungarian SMEs and in the case of FBs, the number of problems and challenges that affected their operation increased between 2017 and 2020. However, we do not have enough data to give a statistically reliable statement to explain the causes of this trend lines.

In the case of both factors, a smaller difference can be seen between FBs and SMEs. However, no significant difference can be measured between the two market entities.

This implies that family businesses and small and medium sized businesses change in a very similar fashion in Hungary. Based on our data the processes determining the SME sector, apply to the FB sector as well. However, a difference can be measured in the ownership structure, which leads to the conclusion that even in the case of the emerging market, it is worth treating family businesses separately from the small and medium-sized business sector. In summary, it is worthwhile to carry out further research in order to better understand and explore the characteristics of the two sectors as well as their changes over time in the case of the emerging market as well.

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APPENDIX

Table 1: ANOVA test of SME ownership structure

Descriptive Statistics			
	Mean	Std. Deviation	N
Magántuljadon_arány_2017	91.80	24.566	263
Magántuljadon_arány_2020	77.29	33.772	263

Multivariate Tests[a]									
Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[c]
time	Pillai's Trace	.114	33.855[b]	1.000	262.000	.000	.114	33.855	1.000
	Wilks' Lambda	.886	33.855[b]	1.000	262.000	.000	.114	33.855	1.000
	Hotelling's Trace	.129	33.855[b]	1.000	262.000	.000	.114	33.855	1.000
	Roy's Largest Root	.129	33.855[b]	1.000	262.000	.000	.114	33.855	1.000

Tests of Within-Subjects Effects									
Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
time	Sphericity Assumed	27680.935	1	27680.935	33.855	.000	.114	33.855	1.000
	Greenhouse-Geisser	27680.935	1.000	27680.935	33.855	.000	.114	33.855	1.000
	Huynh-Feldt	27680.935	1.000	27680.935	33.855	.000	.114	33.855	1.000
	Lower-bound	27680.935	1.000	27680.935	33.855	.000	.114	33.855	1.000
Error(time)	Sphericity Assumed	214217.079	262	817.622					
	Greenhouse-Geisser	214217.079	262.000	817.622					
	Huynh-Feldt	214217.079	262.000	817.622					
	Lower-bound	214217.079	262.000	817.622					

Tests of Within-Subjects Contrasts									
Source	time	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]

time	Linear	27680.935	1	27680.935	33.855	.000	.114	33.855	1.000
Error(time)	Linear	214217.079	262	817.622					

Table 2: ANOVA test of FB ownership structure

Descriptive Statistics			
	Mean	Std. Deviation	N
Family ownership rate 2017	85.88	25.874	199
Family ownership rate 2020	94.53	15.491	199

Multivariate Tests[a]									
Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[c]
time	Pillai's Trace	.073	15.702[b]	1.000	198.000	.000	.073	15.702	.976
	Wilks' Lambda	.927	15.702[b]	1.000	198.000	.000	.073	15.702	.976
	Hotelling's Trace	.079	15.702[b]	1.000	198.000	.000	.073	15.702	.976
	Roy's Largest Root	.079	15.702[b]	1.000	198.000	.000	.073	15.702	.976

Tests of Within-Subjects Effects									
Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
time	Sphericity Assumed	7450.462	1	7450.462	15.702	.000	.073	15.702	.976
	Greenhouse-Geisser	7450.462	1.000	7450.462	15.702	.000	.073	15.702	.976
	Huynh-Feldt	7450.462	1.000	7450.462	15.702	.000	.073	15.702	.976
	Lower-bound	7450.462	1.000	7450.462	15.702	.000	.073	15.702	.976
Error(time)	Sphericity Assumed	93949.538	198	474.493					
	Greenhouse-Geisser	93949.538	198.000	474.493					
	Huynh-Feldt	93949.538	198.000	474.493					
	Lower-bound	93949.538	198.000	474.493					

Tests of Within-Subjects Contrasts

Source	time	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
time	Linear	7450.462	1	7450.462	15.702	.000	.073	15.702	.976
Error(time)	Linear	93949.538	198	474.493					

Table 3: SME Sales ANOVA Test

Descriptive Statistics			
	Mean	Std. Deviation	N
Sales revenue 2017	2.24	1.251	263
Sales revenue 2020	3.259	1.1858	263

Multivariate Tests[a]									
Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[c]
time	Pillai's Trace	.257	90.696[b]	1.000	262.000	.000	.257	90.696	1.000
	Wilks' Lambda	.743	90.696[b]	1.000	262.000	.000	.257	90.696	1.000
	Hotelling's Trace	.346	90.696[b]	1.000	262.000	.000	.257	90.696	1.000
	Roy's Largest Root	.346	90.696[b]	1.000	262.000	.000	.257	90.696	1.000

Tests of Within-Subjects Effects									
Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
time	Sphericity Assumed	136.548	1	136.548	90.696	.000	.257	90.696	1.000
	Greenhouse-Geisser	136.548	1.000	136.548	90.696	.000	.257	90.696	1.000
	Huynh-Feldt	136.548	1.000	136.548	90.696	.000	.257	90.696	1.000
	Lower-bound	136.548	1.000	136.548	90.696	.000	.257	90.696	1.000
Error(time)	Sphericity Assumed	394.452	262	1.506					
	Greenhouse-Geisser	394.452	262.000	1.506					
	Huynh-Feldt	394.452	262.000	1.506					
	Lower-bound	394.452	262.000	1.506					

Tests of Within-Subjects Contrasts

Source	time	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
time	Linear	136.548	1	136.548	90.696	.000	.257	90.696	1.000
Error(time)	Linear	394.452	262	1.506					

Table 4: FB Revenue ANOVA Test

Descriptive Statistics			
	Mean	Std. Deviation	N
Sales revenue 2017	2.17	1.235	205
Sales revenue 2020	3.200	1.1350	205

Multivariate Tests[a]									
Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[c]
time	Pillai's Trace	.258	70.793[b]	1.000	204.000	.000	.258	70.793	1.000
	Wilks' Lambda	.742	70.793[b]	1.000	204.000	.000	.258	70.793	1.000
	Hotelling's Trace	.347	70.793[b]	1.000	204.000	.000	.258	70.793	1.000
	Roy's Largest Root	.347	70.793[b]	1.000	204.000	.000	.258	70.793	1.000

Tests of Within-Subjects Effects									
Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
time	Sphericity Assumed	108.588	1	108.588	70.793	.000	.258	70.793	1.000
	Greenhouse-Geisser	108.588	1.000	108.588	70.793	.000	.258	70.793	1.000
	Huynh-Feldt	108.588	1.000	108.588	70.793	.000	.258	70.793	1.000
	Lower-bound	108.588	1.000	108.588	70.793	.000	.258	70.793	1.000
Error(time)	Sphericity Assumed	312.912	204	1.534					
	Greenhouse-Geisser	312.912	204.000	1.534					
	Huynh-Feldt	312.912	204.000	1.534					
	Lower-bound	312.912	204.000	1.534					

Tests of Within-Subjects Contrasts

Source	time	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
time	Linear	108.588	1	108.588	70.793	.000	.258	70.793	1.000
Error(time)	Linear	312.912	204	1.534					

Table 5: ANOVA test of SME problems / challenges

Descriptive Statistics			
	Mean	Std. Deviation	N
How many problems 2017	.89	.741	263
How many problems 2020	2.21	.964	263

Multivariate Tests[a]									
Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[c]
time	Pillai's Trace	.555	326.690[b]	1.000	262.000	.000	.555	326.690	1.000
	Wilks' Lambda	.445	326.690[b]	1.000	262.000	.000	.555	326.690	1.000
	Hotelling's Trace	1.247	326.690[b]	1.000	262.000	.000	.555	326.690	1.000
	Roy's Largest Root	1.247	326.690[b]	1.000	262.000	.000	.555	326.690	1.000

Tests of Within-Subjects Effects									
Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
time	Sphericity Assumed	228.914	1	228.914	326.690	.000	.555	326.690	1.000
	Greenhouse-Geisser	228.914	1.000	228.914	326.690	.000	.555	326.690	1.000
	Huynh-Feldt	228.914	1.000	228.914	326.690	.000	.555	326.690	1.000
	Lower-bound	228.914	1.000	228.914	326.690	.000	.555	326.690	1.000
Error(time)	Sphericity Assumed	183.586	262	.701					
	Greenhouse-Geisser	183.586	262.000	.701					
	Huynh-Feldt	183.586	262.000	.701					
	Lower-bound	183.586	262.000	.701					

Tests of Within-Subjects Contrasts

Source	time	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
time	Linear	228.914	1	228.914	326.690	.000	.555	326.690	1.000
Error(time)	Linear	183.586	262	.701					

Table 6. ANOVA test of FB problems / challenges

Descriptive Statistics			
	Mean	Std. Deviation	N
How many problems 2017	.89	.759	205
How many problems 2020	2.15	.976	205

Multivariate Tests[a]									
Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[c]
time	Pillai's Trace	.539	238.874[b]	1.000	204.000	.000	.539	238.874	1.000
	Wilks' Lambda	.461	238.874[b]	1.000	204.000	.000	.539	238.874	1.000
	Hotelling's Trace	1.171	238.874[b]	1.000	204.000	.000	.539	238.874	1.000
	Roy's Largest Root	1.171	238.874[b]	1.000	204.000	.000	.539	238.874	1.000

Tests of Within-Subjects Effects									
Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
time	Sphericity Assumed	162.351	1	162.351	238.874	.000	.539	238.874	1.000
	Greenhouse-Geisser	162.351	1.000	162.351	238.874	.000	.539	238.874	1.000
	Huynh-Feldt	162.351	1.000	162.351	238.874	.000	.539	238.874	1.000
	Lower-bound	162.351	1.000	162.351	238.874	.000	.539	238.874	1.000
Error(time)	Sphericity Assumed	138.649	204	.680					
	Greenhouse-Geisser	138.649	204.000	.680					
	Huynh-Feldt	138.649	204.000	.680					
	Lower-bound	138.649	204.000	.680					

Tests of Within-Subjects Contrasts

Source	time	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
time	Linear	162.351	1	162.351	238.874	.000	.539	238.874	1.000
Error(time)	Linear	138.649	204	.680					

Table 7: ANOVA test for the succession variable for SMEs

Descriptive Statistics			
	Mean	Std. Deviation	N
Your company has a succession strategy 2017	2.53	.591	224
Your company has a succession strategy 2020	2.585	.6907	224

Multivariate Tests[a]									
Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[c]
time	Pillai's Trace	.004	.933[b]	1.000	223.000	.335	.004	.933	.161
	Wilks' Lambda	.996	.933[b]	1.000	223.000	.335	.004	.933	.161
	Hotelling's Trace	.004	.933[b]	1.000	223.000	.335	.004	.933	.161
	Roy's Largest Root	.004	.933[b]	1.000	223.000	.335	.004	.933	.161

Tests of Within-Subjects Effects									
Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
time	Sphericity Assumed	.377	1	.377	.933	.335	.004	.933	.161
	Greenhouse-Geisser	.377	1.000	.377	.933	.335	.004	.933	.161
	Huynh-Feldt	.377	1.000	.377	.933	.335	.004	.933	.161
	Lower-bound	.377	1.000	.377	.933	.335	.004	.933	.161
Error(time)	Sphericity Assumed	90.123	223	.404					
	Greenhouse-Geisser	90.123	223.000	.404					
	Huynh-Feldt	90.123	223.000	.404					
	Lower-bound	90.123	223.000	.404					

Tests of Within-Subjects Contrasts									
Source	time	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]

time	Linear	.377	1	.377	.933	.335	.004	.933	.161
Error(time)	Linear	90.123	223	.404					

Table 8. ANOVA test for the succession variable of FBs

Descriptive Statistics			
	Mean	Std. Deviation	N
Your company has a succession strategy 2017	2.51	.592	202
Your company has a succession strategy 2020	2.569	.6966	202

Multivariate Tests[a]									
Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[c]
time	Pillai's Trace	.004	.724[b]	1.000	201.000	.396	.004	.724	.135
	Wilks' Lambda	.996	.724[b]	1.000	201.000	.396	.004	.724	.135
	Hotelling's Trace	.004	.724[b]	1.000	201.000	.396	.004	.724	.135
	Roy's Largest Root	.004	.724[b]	1.000	201.000	.396	.004	.724	.135

Tests of Within-Subjects Effects									
Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
time	Sphericity Assumed	.300	1	.300	.724	.396	.004	.724	.135
	Greenhouse-Geisser	.300	1.000	.300	.724	.396	.004	.724	.135
	Huynh-Feldt	.300	1.000	.300	.724	.396	.004	.724	.135
	Lower-bound	.300	1.000	.300	.724	.396	.004	.724	.135
Error(time)	Sphericity Assumed	83.200	201	.414					
	Greenhouse-Geisser	83.200	201.000	.414					
	Huynh-Feldt	83.200	201.000	.414					
	Lower-bound	83.200	201.000	.414					

Tests of Within-Subjects Contrasts									
Source	time	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
time	Linear	.300	1	.300	.724	.396	.004	.724	.135
Error(time)	Linear	83.200	201	.414					

Table 9: GCM-HLM results for SMEs and FBs for succession

Estimates of Fixed Effects[a]							
						95% Confidence Interval	
Parameter	Estimate	Std. Error	df	t	Sig.	Lower Bound	Upper Bound
Intercept	2.532448	.039231	225.100	64.553	.000	2.455142	2.609755
time	.113940	.055882	264.128	2.039	.092	.003908	.223971

Estimates of Covariance Parameters[a]							
						95% Confidence Interval	
Parameter		Estimate	Std. Error	Wald Z	Sig.	Lower Bound	Upper Bound
Repeated Measures	Variance	.296575	.034378	8.627	.078	.236301	.372224
Intercept + time [subject = id]	UN (1,1)	.051307	.035426	1.448	.148	.013257	.198564
	UN (2,1)	-.037980	.025358	-1.498	.134	-.087681	.011721
	UN (2,2)	.171262[b]	.000000	.	.	.	.

Estimates of Fixed Effects[a]							
						95% Confidence Interval	
Parameter	Estimate	Std. Error	df	t	Sig.	Lower Bound	Upper Bound
Intercept	2.519651	.041383	203.002	60.886	.000	2.438055	2.601247
time	.065715	.063576	204.138	1.034	.303	-.059636	.191065

Estimates of Covariance Parameters[a]							
						95% Confidence Interval	
Parameter		Estimate	Std. Error	Wald Z	Sig.	Lower Bound	Upper Bound
Repeated Measures	Variance	.319285	.040972	7.793	.000	.248284	.410591
Intercept + time [subject = id]	UN (1,1)	.030081	.041840	.719	.472	.001970	.459449
	UN (2,1)	-.019442	.030164	-.645	.519	-.078564	.039679
	UN (2,2)	.188322[b]	.000000	.	.	.	.

EXTENDING TAM FOR INFORMATION SYSTEMS TO ACCEPTANCE RESEARCH/MODEL OF CONSUMER GOODS (CGAM): A THEORETICAL APPROACH

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Abstract

The aim is to broaden the Technology Acceptance Model (TAM) application to consumer goods and to conceptualise the Consumer Good Acceptance Model (CGAM) based on TAM while keeping its core elements and relationships as they were initially presented. Therefore, structural elements of the TAM were reviewed, critical statements of the usage of TAM and how it was constructed were considered to extend the TAM while eliminating flaws and creating value for manufacturers. The conceptualised CGAM is theoretically well supported. The framework upon which the TAM is created allows to adjust it to any acceptance process no matter which good it is. On condition that the definitions of the core elements of the TAM are adjusted, and relevant external factors for the consumer good are introduced. This study provides a new approach to widen the application area of the TAM by extending it to the acceptance of consumer goods.

Key Words

Technology Acceptance Model; consumer economics; consumer behaviour; consumer acceptance; behavioural intention.

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INTRODUCTION

The TAM is a widely applied model for technology-related acceptance research. It is an essential tool for researchers since acceptance can be seen as an influential variable for the successful introduction of new technology or products, as well as for its intended use (van der Laan, Heino & De Waard, 1997). Considering that people are “fundamentally decision makers” (Saaty, 2008, p.83) signifies that every action is eventually the result of a decision, consciously or unconsciously made (Nelson, 1970; Saaty, 2008). Consequently, every consumption decision is linked to an evaluative process that finally leads to a decision and thus to accepting and using chosen services or products (Adell, 2009; Bettmann, Johnson & Payne, 1991). This implies that acceptance is not only relevant in the context of technological products or IS but also for any consumer good designed to be bought by people.

The phenomenon of acceptance has therefore not only been an important topic in the field of IS and technology research (Benbasat & Barki, 2007) but also for consumer research and marketing studies (Gefen, Karahanna & Straub, 2003; Kollat, Engel & Blackwell, 1970; Pikkarainen et al., 2004; Siró et al., 2008). Contemplating the nature of decision making and the part this process plays in any behaviour, it is clear that the decision to use or buy something can ultimately lead to not only accepting a technology, but also a product or service. Therefore, relating it to the TAM and the fact that TAM has been used to study consumer acceptance in various settings (McCoy, Galletta & King, 2007; Roy, 2017; Childers, Carr, Peck & Carson, 2001) and is well supported and accepted, it is logical to presume its successful extension to non-technological consumer goods. Thus adjusting the TAM would allow to forecast the acceptance of goods while assessing the influence of culture, social influence and product characteristics.

This presumption proved to be accurate, based on the TAM's theoretical conceptualisation, showing a modified TAM, now called CGAM, is applicable for consumer goods. Consequently, the attempt to adapt the TAM for consumer goods is not only reasonable but also achievable and creates value for manufacturers.

WHAT IS ACCEPTANCE?

A common element in acceptance research is that there is no coherent and generally accepted definition of the term or how to measure acceptance (Lucke, 1995; Quiring, 2006). However, a consensus exists about the common and scientific use of the term, where its synonyms are “approval”, “diffusion”, and especially “adoption” (Lucke, 1995; Williams et al., 2009). A distinction between “acceptance” and “adoption” was made by Kollmann (2004) and by Renaud and Van Biljon (2008), describing “adoption” more like a process, and “acceptance” more like an attitude towards a technology playing an important role after the actual purchase. Considering the work of Adell (2009) and Kollmann (1998), acceptance is logically seen as a process,

and “adoption” and “acceptance” are used interchangeably. Especially when focusing on the acceptance of a consumer good, Adell’s (2009, p. 27) fourth criterion for acceptance appears to fit well applying it to consumer goods, namely: “This definition of acceptance aims for a behavioral change and may be seen as being based on the earlier categories, in that the will to use a system is based on drivers’ assessment of the usefulness of the system (as in category 2) as well as all other attitudes to the system and its effects (as in category 3).“ This acknowledges that a product cannot be accepted or declined without the consumer being aware of it, which presupposes that the decision to purchase, or at least sample, the product has already been made. This conception is coherent with the work of Adell (2009) and Kollmann (1998, 2004).

Additionally, researchers agree on one common factor in the acceptance process: that an individual’s judgment affects acceptance and acceptability. Regan et al. (2002, p. 10) states that “While everyone seems to know what acceptability is, and all agree that acceptability is important, there is no consistency across studies as to what ’acceptability’ is and how to measure it.”

Considering the statement by Regan et al. (2002), it becomes apparent that increasing knowledge about how and by what mechanism the acceptance of consumer goods is influenced, will not only help to improve acceptance but also provide valuable information for manufacturers as to how a product should be modified, and positioned in the market. Additionally, more profound knowledge may be gained of the nature of “acceptability” and how it could best be measured.

TAM: WHY IT SHOULD BE USED TO PREDICT CONSUMER ACCEPTANCE OF NON-TECHNOLOGICAL CONSUMER GOODS

The TAM developed by Venkatesh and Bala (2008), henceforth named TAM III, is an extension of the TAM originally devised by Davis (1989), and further developed as a TAM progression by Venkatesh and Davis (2000), herein referred to as TAM II. The original TAM was not only extended over the years through progressive research but also adapted to incorporate critical comment by Adams, Nelson and Todd (1992) and Davis and Venkatesh (1996).

Davis (1989) designed the original TAM to explain and predict the behaviour of technology users. Further, he aimed to detect factors that influenced the acceptance or rejection process. In order to do so, Davis used the Theory of Reasoned Action (TRA) to connect the five factors: system design features, perceived usefulness (PU), perceived ease of use (PEOU), attitude toward using and the actual system use (Davis, 1989; Davis, Bagozzi & Warshaw, 1989). However, the model’s core elements PU and PEOU are influenced by external variables (Arnold & Klee, 2016). These two factors are relevant in order to control the beliefs users have about a system. The model can also be used to foreshadow the behavioural intentions of prospective users and their actual system use (Davis, 1989; Davis, Bagozzi

& Warshaw, 1989). TAM was criticised as a subjective norm was not included as an influencing factor (Arnold & Klee, 2016). This deficiency was eliminated by Venkatesh and Davis in 2000 when they aimed for explanations of PU and usage intentions based on social influence and cognitive instrumental processes. Subjective norm, voluntariness and image, define the social influence processes, implying "the ways other people affect one's beliefs, feelings, and behaviour" (Mason, Conrey & Smith, 2007, p. 279; Venkatesh & Davis, 2000, p. 187). Cognitive instrumental processes are defined by job relevance, output quality, demonstrable results and perceived ease of use. By specifying the external variables influencing PU and behavioural intentions, Venkatesh and Davis (2000) created the TAM II.

Further development of TAM II towards the formulation of TAM III by Venkatesh and Bala (2008) is based on the Venkatesh (2000) model of determinants affecting PEOU. Venkatesh subsequently addressed the criticism that there was a lack of understanding about the determinants influencing one of the key drivers of acceptance (Taylor & Todd, 1995). The determinants can be divided into two categories: anchor and adjustment variables. The anchor variables, namely computer self-efficacy, perceptions of external control, computer anxiety and computer playfulness, are based on initial judgment and will be adjusted over time with the accumulation of experience. The evolution of the original TAM towards a more comprehensive and precise TAM III reflects the four components PU, PEOU, behavioural intention and use behaviour (from TAM I), and the moderating variable, voluntariness, and the variable, experience influenced by time (introduced in TAM II), all being considered core elements of the model. Additionally, the determinants of PU and PEOU are invariably adjusted whenever the product of interest changes (Pikkarainen et al., 2004; Venkatesh & Bala, 2008).

Limitations as Advocates

That aside, the focus of this conceptual research approach is on TAM III, as the most advanced version of the TAM. Besides the already discussed limitations, which Venkatesh, Davis and Bala have eliminated, current research lists the following aspects as critical.

Despite being a vastly accepted and widely used source for researchers TAM has been subject to criticism for leading research in new directions without fully understanding its antecedents (Benbasat & Barki, 2007). Despite this discussion being of great relevance in general, it is believed subordinate to the interests of this particular research at the present time. This belief arises because it is not the structure that is considered weak, but the restricted scope of research about its elements. Goodhue (2007) argues that TAM only reveals the factors influencing technology usage without capturing how technology affects user performance. Aiming to extend TAM to consumer goods, the effects on user performance are somewhat irrelevant, as the purpose of consumer goods is to satisfy needs, considering the four categories of consumer goods classification (Bucklin, 1963;

Holbrook & Howard, 1977; Holton, 1958; Luck, 1959), and focuses less on enhancing performances.

Price and cost have not been addressed in TAM or its extension, which is not necessarily critical as the TAM was mainly applied in workplace settings, where price and cost are more relevant for the firm. However, in the market place for consumer goods, price and costs are of great relevance as they can have an immense impact on the decision to accept and consume a good (Brown & Venkatesh, 2005; Coulter & Coulter, 2007; Lunceford, 2009). This suggests the relative unimportance of time and effort as sole drivers for the acceptance process (Venkatesh, Thong and Xu, 2012).

Additionally, voluntariness as a moderating variable is a theoretically well-supported TAM element, including the individual utilization of innovation. A voluntary usage setting of Information Technology (IT) usage in a working environment is an arguable inclusion as such decisions are mostly based on top-down directives. Again, this "weakness" in TAM can be utilized to support its adaptation for consumer goods because in that context, consumers usually do have a choice whether or not to purchase and use a product. Consequently, this reservation does not apply to TAM in a consumer good setting, presuming that usage or purchase behaviour is voluntary. In contrast to voluntariness, social influencing factors that might not have a significant impact in the working environment, are of greater relevance for consumer good acceptance (Ang, Ramayah & Amin, 2015; Malatji, van Eck & Zuva, 2020; Shan & King, 2015).

Theoretical Backup

So far, considering why TAM should be used to predict consumer acceptance of non-technological consumer goods, has been partially answered by using criticism of the model as advocacy for its extension towards consumer goods.

Regarding the theoretical background of TAM there are other aspects supporting the extension.

The initial TAM by Davis (1989) was built upon two theories that originated in the field of social psychology, the TRA by Ajzen and Fishbein (1980) and the Theory of Planned Behaviour (TPB) by Ajzen (1991). TRA is based on the precept that humans normally behave in a reasonable way, implying that information, both explicit and implicit, are considered. Similar to the process of acceptance, the theory is based on a causal chain; thus, different factors lead to specific behaviour. The enhancement by perceived behavioural control and consequently the development of the TPB allows, in contrast to the TRA, the inclusion of all behaviour – under full volitional control or not. TPB is the more suitable model to understand and predict human behaviour as the performance of a behaviour is more likely when its evaluation is positive, social pressure to perform the behaviour occurs, and people think they can do so or have the opportunity to do so (Ajzen, 2005). Given the origin of TAM, a modification of the TAM is a reasonable objective when creating an applicable model for the consumer goods market. This can be based on the relation of those theories with acceptance and consumer

behaviour. Accordingly, it can be assumed that the TAM would be applicable in testing the acceptance of any consumer good.

Literature research showed various applications and enhancements of TAM, focusing on different IS and applying new external variables (Lee, Kozar & Larsen, 2003). Additionally, research has taken TAM out of the working environment context to successfully apply it to non-organizational settings (Agarwal & Karahanna, 2000; Davis, Bagozzi & Warshaw, 1989, 1992; Mathieson, 1991; Szajna, 1994), supporting the research attempt to open up TAM for consumer goods.

Considering that new processes and constructs were included in closing knowledge gaps regarding human decision-making processes and behaviour, the TAM has a profound theoretical foundation. This makes it transferable to most consumer behaviour-related research, as the model well covers human behaviour and decision-making processes. Thus, changing its application area from technology applications to consumer goods, in general, is theoretically well supported. Moreover, as discussed above, several points of criticism are advantageous for the extension of TAM into consumer goods. This research hypothesises that an extension of TAM for consumer goods is possible while assuming all effects are unaltered.

Despite having argued that an extension of TAM for consumer goods is possible, the question of need and contribution remains. Several models are well-established in the field of consumer behaviour and marketing research. Table 1 shows some of these models, including their deficiencies and why the conceptualized CGAM is the better alternative. Additionally, it can be pointed out that some of these models are considered 'grand models' due to their large scope (Kassarjian 1982). Considerable complexity alone supports the case of transforming TAM into CGAM, as the aim is not only to extend TAM but to offer based on a well-tested model, a new model that allows easy adaptation even for manufacturers. Focusing the extension of the TAM on the external factors that influence PU and PEOU enables any company or product development department to adjust the model to their product of interest at a low expense rate.

Table 1: Benefits of CGAM over existing models

Model	Focus	Deficiencies	Benefits of CGAM
Engel-Blackwell-Kollat-Model (1979)	"1. To highlight more clearly the interrelationships between stages in the decision process and the various endogenous and exogenous variables. 2. To clarify the relationship between attitude and behavior to reflect the contribution of Fishbein extended model. Beliefs and	Information and experience are characterised as an important phase upon which several of the decision process stages of problem recognition are based. Additionally, the scope of application is unclear. (Rau & Samiee, 1981) The linear structure does not represent the buyer decision-making, as	Experience is not a primary requirement; this is particularly valuable concerning innovative products. Thus, the CGAM enables acceptance to be tested even before the market launch, without the consumer having

	intentions are introduced as explicit variables for the first time as in normative compliance. 3. To define variables with greater precision and to specify functional relationships to permit empirical testing" (Engel, Blackwell, Kollat 1979).	those elements might not occur in that specific order or even concuurently (Bringer &Lutz, 1986; Phillips & Bradshaw, 1992).	any experience with the product.
Howard-Sheth Model (1969)	Explains consumer's brand choice behaviour over a period of time based on stimulus-response (Howard & Sheth, 1969).	Complex, especially for routine purchases. Additionally, consumer's do not follow the complete path of the model (Olshavsky & Granbois, 1979).	CGAM does not specially require the consumer to follow a specific buying or decision process behaviour. Further, it is simple enough to be applied for all kind of goods, with high or low engagement rate.
Nicosia Model (1966)	Explains consumer behaviour by creating a link between the organization and the consumer (Nicosia, 1966).	Assumes the presence of predispositions influenced by firm or brand. Additionally, it is rather difficult to find a distinct focus, as Nicosia's attempt to point out a focus is all-encompassing. Additionally, it is from a marketer's perspective and not a consumer's. Validity of the suggested relationships is not empirically supported. (Nicosia, 1966; Rau & Samiee, 1981; Tuck 1976)	CGAM allows to test consumer acceptance for products that are new to the market or not specifically connected to a specific firm or brand.
The theory of planned behavior (TPB) (Ajzen, 1991)	"The theory of planned behavior (TPB) has been used successfully to explain and predict behavior in a multitude of behavioral domains." (Ajzen, 2020, p. 341)	Non in this context. Was used as foundation for TAM.	As Ajzen stated 1991 the TPB is open for further adjustment and introduction of new predictors, thus considering how Davis (1989) did this a further adjustment while considering the current variables is in principle possible (Ajzen, 1991).

Source: Own survey.

Summarising, the benefit of CGAM is that it allows an early-stage acceptance determination while also generating knowledge about the factors influencing the level of acceptance. Additionally, CGAM does not focus on brands or firms or implies knowledge about a firm or brand, nor does it presume experience. Therefore, CGAM is a more practice- and manufacturer-oriented model.

CONCEPTUALISATION OF CGAM

As stated above, Pikkarainen et al. (2004) and Venkatesh and Bala (2008) pointed out that the external variables determining PU and PEOU will need adjustment whenever the product of interest changes. These determinants correspondingly form the starting point for the modification process. They can be divided into four categories: social influence processes, cognitive instrumental processes (Venkatesh & Davis, 2000), as well as anchor, and adjustment, variables (Venkatesh & Bala, 2008).

In contrast to other approaches extending the TAM beyond IS, where variables were incorporated depending on the specifics of the context within which the study's focus was situated (Hsu & Lu, 2004), extending TAM for consumer goods calls for a more radical approach. As it is not sufficient to just add more variables or exchange a few, the complete set of variables determining PU and PEOU will need to be adjusted so that the characteristics of the good of interest can be met, consequently requiring a departure from the main body of TAM III as Venkatesh and Bala (2008) conceived it. This approach was also suggested by Benbasat and Barki (2007). In order to extend TAM, the core elements will remain as they were, although the definitions of PU and PEOU need also to be adjusted. Some of the variables influencing PU and PEOU will be adopted from TAM III, with consequent changes in the definitions required. All newly integrated variables are, on the one hand, defined based on the literature, while incorporating the finding from Förster (2017), or the definitions are, on the other hand, based on what the construct aims to address in the case of consumer good acceptance.

Admittedly, this approach is rather general, as no classification for what kind of consumer good this model will be conceptualised is given. There are two types of consumer goods, which are further segmented into three groups. The first type concerns frequency and duration, differentiating between durable, semidurable, and non-durable goods (Graber-Kräuter, 2018). The buying decision process characterises the second type, which includes convenience, shopping, and speciality goods. For more detailed definitions, see Holton (1958). Since this paper is based on Förster (2017), the focus is on convenience goods. However, the goal is to develop a generally applicable CGAM.

PU was defined as "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989, p. 320). Since systems are no longer the focus, the perception of what constitutes PU, and its addresses, must be modified. A more social

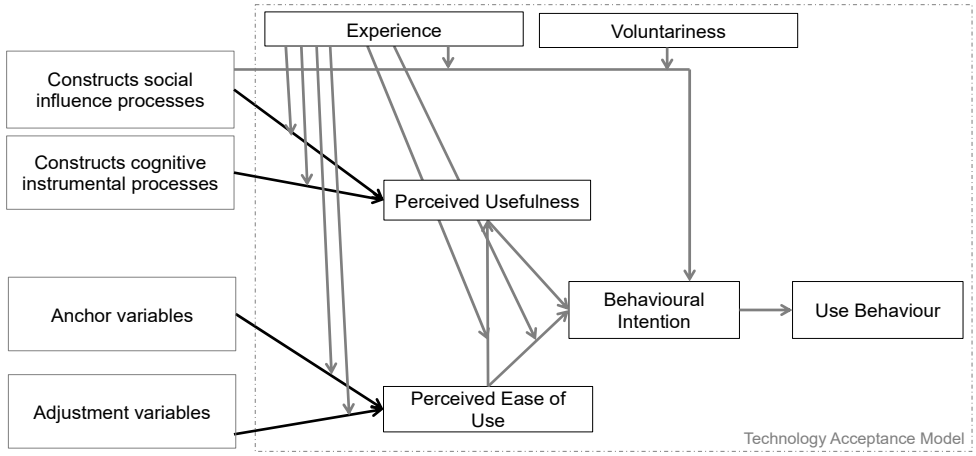
influence-based definition was proposed by Förster (2017, p. 35): “PU is the degree to which a person believes that consuming a particular product would increase their social status or contribute to the image they are trying to communicate to the outside world” *consistent with their lifestyle and needs* (as subsequently qualified). In order to adjust the definition for PEOU to be more product-oriented, Förster (2017, p. 35) defined PEOU as follows: “PEOU is the degree to which a person believes that consuming or buying a product would be free of effort” *while also considering the investment-to-benefit-ratio* (as subsequently qualified). Both definitions are addressing the shift towards products while failing to include all categories of determinants. Before introducing new definitions for PU and PEOU, it is indispensable to consider the definitions of the four variable categories influencing PU and PEOU.

The concepts influencing PU are social influence processes, which imply “the ways other people affect one’s beliefs, feelings, and behavior” (Mason, Conrey & Smith, 2007, p. 279; Venkatesh & Davis, 2000, p. 187) and cognitive instrumental processes. The latter focuses on the linkage of higher-level goals to specific actions which are essential for goal achievement (Venkatesh, 2000). Förster (2017, p. 39) introduced a new description of cognitive instrument processes: “consumers form judgments about PU in parts based on cognitively comparing what a product is capable of in terms of representing what they want to communicate to the outside world”. In addition, the variables influencing PEOU are anchor and adjustment variables. Anchors are general information upon which individuals can rely on in the absence of specific knowledge. Besides, anchoring information is often unconsciously included in the decision-making process. Adjustment variables relate to beliefs based on actual interaction with a system or product (Venkatesh, 2000).

The two moderating variables, experience and voluntariness, are also seen as core elements of TAM. Venkatesh and Davis (2000) implied that experience diminishes the effect social influence has on PU and usage intention over time. Voluntariness is defined as “the extent to which potential adopters perceive the adoption decision to be nonmandated” (Agarwal & Prasad, 1997, p. 564). This would differentiate the mandatory and voluntary usage settings, as the contingency of mandatory usage setting impacts the compliance effect of subjective norms on the intention to use. Additionally, the effect of a subjective norm on intention to use is strengthened by the compliance effect, increasing as an individual’s need to fulfil a social actor’s expectations. The social actor is considered as an executor of rewards and punishment dependent on the implementation and non-implementation of the relevant behaviour (French & Raven, 1959; Venkatesh & Davis, 2000).

Figure 1 presents the framework upon which the CGAM will be conceptualised while considering all TAM III’s underlying assumptions as correct.

Figure 1: TAM III as framework for conceptualisation



Source: Own illustration based on Venkatesh & Bala (2008).

Considering the previously discussed definitions of the variable categories influencing PU and PEOU, determinates can be selected based on consumer good characteristics and their general validity. General validity is important here in so far as the determinants should be applicable for consumer goods in general.

Variables of the construct of social influence processes

Starting with variables of the construct of social influence processes, subjective norm and image are two determinates which are adapted from TAM. Subjective norm was defined as a “person’s perception that most people who are important to him think he should or should not perform the behaviour in question” (Fishbein & Ajzen, 1975, p. 302) and has direct influence on PU and behavioural intention, as well as image. Research by Stafford (1966) supports the integration of the variable subjective norm, as his research showed that adaptation of brand choices is often influenced by the leader of one social group since he or she influences its group members.

Image also has a direct effect on PU and is a significant factor when it comes to communicating one’s own image to the outside world. The transferred image can be linked to the self-concept of a person, which is described as “beliefs a person holds about their attributes, and how they evaluate these qualities” (Solomon et al., 2010, p. 144). In the context of social interaction, the image that is communicated to others evokes a higher concern “about the social appropriateness of products and consumption activities” (Solomon et al., 2010, p. 149). In the context of consumer goods, there are two relevant definitions regarding image. First, image as "the degree to which use of an innovation is perceived to enhance one’s image or status in one’s social system" (Moore & Benbasat, 1991, p. 195); this is consistent with TAM II. Second, Keller defined image in the context of brands as “perceptions about a brand as reflected by the brand associations held in memory” (Keller, 1993, p. 2). Taking into account that TAM originated from

theories in the field of social psychology, it is of great relevance that a person's image can be related to a product image, including variables addressing these topics.

A newly integrated variable in the context of social influence processes is social conformity; addressing a person's desire to fit in, while avoiding negative attention (Jahoda, 1959). Cialdini and Goldstein (2004, p. 606) referred to conformity as "the act of changing one's behavior to match the responses of others". Considering social conformity, especially in the context of consumer goods, is important. As was pointed out by McCracken (1986), consumer goods are used to extract cultural meaning, since cultural meaning is projected from a culturally constituted world onto consumer goods. Furthermore, through goods, cultural meaning is made visible for the individual as well as conveying an inherent concreteness that individuals would not otherwise have (McCracken, 1986). Attitudes and expectations subconsciously received from others also influence one's own behaviour. Thus, considering social influence for the consumer goods' acceptance process is a necessity (Venkatesh & Morris, 2000).

Considering all proposed variables for the construct of social influence processes, their relevance is supported by a statement made by McCracken (1986, p. 73): "goods allow individuals to discriminate visually among culturally specified categories by encoding these categories in the form of a set of material distinctions".

All three variables directly affect PU, while the subjective norm is also moderated by experience and affects behavioural intention. The latter relation is not only moderated by experience but also by voluntariness.

Variables of the construct of cognitive instrumental processes

Moving on to the construct of cognitive instrumental processes, two variables can be used irrespective of the consumer good of interest. The first variable is lifestyle and the second is perceived quality/brand status. "Lifestyle is described as a certain type of behavior, or preference for a certain type of behavior, in which consumption plays an important role" (Sijtsema et al., 2002, p. 572). Perceived quality, as well as brand status, can influence the market success of a product (Richardson, Dick & Jain, 1994). Kolter (2000, p. 3) described quality as "the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs". Additionally, O'Cass & Choy (2008, p. 342) hold that "Brand status refers to consumer's perceptions of quality, prestige, price of a brand and its capability to act as a status or success symbol". Combining these two aspects enables a consideration of the quality-related characteristics of the consumer goods and how these are perceived by the consumer, as well as delving more deeply into interactions between the two variables i.e., how the perception of brand status influences perceived quality, and vice versa.

A third variable for measuring the construct of cognitive instrumental processes could be the trend factor, although it might not have significant relevance for some consumer goods, as for example, convenience goods as described by Holton (1958, p. 53): "convenience goods are those goods for

which the probable gain from making price and quality comparison among alternative sellers is thought to be small relative to consumer's appraisal of searching costs in terms of time, money and effort". It can also be assumed that for those goods, the benefit of considering the tendency to change would also be small compared to the effort needed to assess the trend factor of that good.

These three variables directly affect PU without being moderated by experience or voluntariness.

Anchor variables

Moving on to the determinants of PEOU, there are two variables that can be proposed as generalised anchors while recognising that the selection is based on constructs addressing purchase-situation related issues. First is availability, relating to how easily a product can be accessed, taking into account its present for the consumer and the frequency, intensity and visibility of product offerings. Second is price, which "refers to the cost or sacrifice exchanged for the promised benefits" (Grier & Bryant, 2005, p. 323), and influences every consumption decision. However, the importance of these varies depending on the consumer good in question, as research has shown price sensitivity varies among products and consumption settings (Wakefield & Inman, 2003).

A third option, which might not be as generalisable as the previous two is handling. In this context, issues regarding the general handling of a product can be included, e.g., the effort needed to consume a product or prepare it for consumption. Depending on the product in question, other aspects such as the way the product is offered, the temperature of consumption and offerings, can also be of relevance. Additionally, aspects concerning changes in those characterises can determine whether change can improve acceptance by simplifying handling. The variables effecting PEOU are all moderated by experience.

Adjustment variables

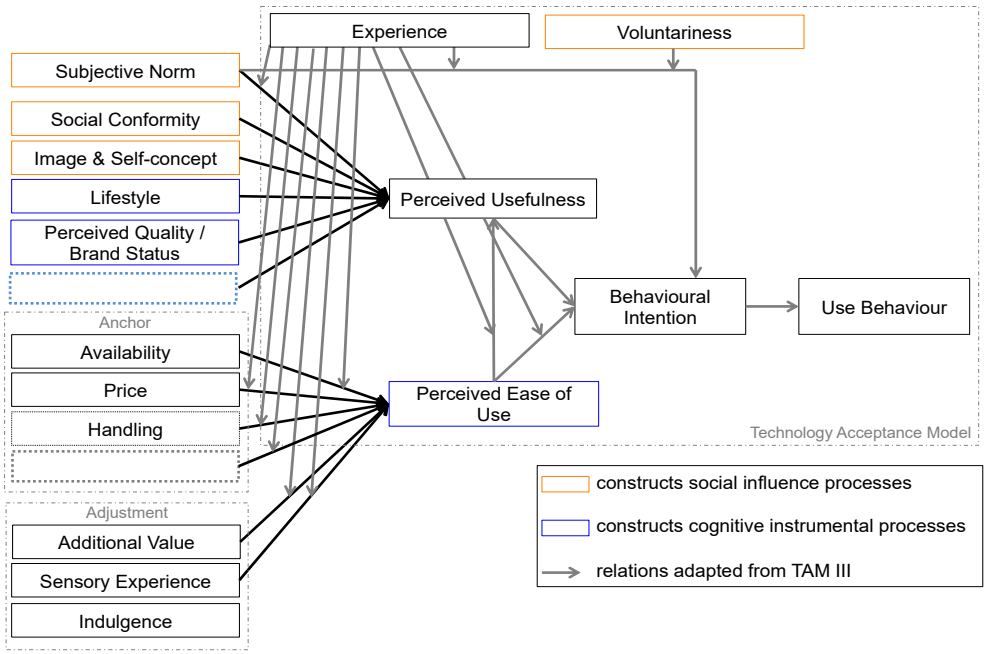
The adjustment variables presented by Venkatesh and Bala (2008) need to be replaced, as previously explained, by adjustment variables that can be used to address more specific consumer good characteristics. Therefore, additional value, sensory experience and indulgence are proposed. Additional value refers to "the tangible and concrete attributes that a consumer may directly experience when using or consuming the product" (Lai, 1995, p. 383), hedonic benefits that are "acquired from a product's capacity to meet a need of enjoyment, fun, pleasure, or distraction from work or anxiety" (Lai, 1995, p. 384), as well as holistic benefits, which are "perceptual benefit(s) acquired from the complementarity, coherence, compatibility, and consistency in a product constellation as a whole" (Lai, 1995, p. 384).

Considering that consumption is not only influenced by external factors such as availability, price and handling, there are more complex enjoyment-focused adjustment variables such as sensory experience, that needs to be considered. Sensory experience includes the perception of a product with all your senses, including visualising, smelling, hearing, touching and tasting (Smith, 2013). Certainly, sensory characteristics concerning taste, texture and appearance can influence the consumption decision (Clark, 1998). Therefore, sensory-experience is an adjustment variable, just as hands-on experience is necessary to evaluate these aspects of a product. With regard to criticism (Venkatesh, 2000) observes that TAM does not give valuable information to manufacturers on how to guide development, including the construct that sensory experience helps overcoming this deficiency.

The third adjustment variable is indulgence which can be referred to as enjoying life and having fun (Hofstede, 2011). However, indulgence is also often associated with adverse outcomes or negative feelings, especially when they result from impulsive behaviour (Ramanathan & Williams, 2007).

All three variables are moderated by experience while affecting PEOU.

Figure 2: Consumer Goods Acceptance Model



Source: Own illustration based on Venkatesh & Bala (2008).

DISCUSSION & CONCLUSION

This paper presents a conceptualised model, based on TAM, which should help to measure acceptance of a product and by what process the acceptance of the product is effected. Additionally, it is hoped to encourage

fellow researchers to consider this approach and take the idea of TAM to the next level by using the proposed CGAM.

The revision of the theoretical concepts of the TAM showed that the newly conceptualised CGAM has great potential, proving to be a valid extension of the TAM to consumer goods in practice. First, acceptance is a core element of the TAM and a significant variable of every human decision-making process (McCracken, 1986). Behaviour can be influenced, as well as led by acceptability, as the theoretical work by Adell (2009) and Kollmann (1998; 2004) showed. Understanding the concept of acceptance and how reaching the state of accepting something is a crucial process when extending the TAM towards consumer goods. Second, human behavioural patterns and decision-making processes are essential for the TAM, given that its structure originates from the TRA and TPB (Ajzen, 1991; Ajzen & Fishbein, 1980). Those topics are also well covered in the CGAM. Third, TAM's development process towards TAM III reflects considered research and ensures that known shortcomings and flaws have been dealt with (Venkatesh, 2000; Venkatesh & Bala, 2008), giving rise to a well-structured and supported model. Using the TAMs theoretical background and its structure to widen its application area to consumer goods in general, is also well supported, as the foundation is well-based on social psychological constructs, which are crucial to understanding and predicting human behaviour (McCracken, 1986).

The presented model is accompanied by some blanks for which variables are proposed in this paper. However, whether these blanks for variables can be generalised or better left as blank spaces to fit the characteristics of the product of interest, still needs to be discussed. The presented model is a solid framework that can be used to study consumer acceptance for consumer goods while allowing researchers to readily adjust the model to their needs. Considering how often TAM has been modified to be applicable for different technology use settings (Lee, Kozar & Larsen, 2003; Taherdoost, 2018), leaving the blank spaces as presented in Figure 2 seems appropriate and more flexible, considering the vast diversity of consumer goods (Bucklin, 1963; Grabner-Kräuter, 2018). In Figure 2 the specifically listed variables are based on the outcomes of the literature research, and highly recommended for the acceptance assessment of consumer goods. The variables suggested for the blank spaces, such as trend factor or handling, need to be reassessed when applying the model to a specific type of consumer good.

Since this study is based on Förster's (2017) approach to extend the TAM by using tea-to-go as a proxy for consumer goods, more specifically convenience goods, this issue has not been further addressed. However, as mentioned above, there are several types of consumer goods. Hence future research should test the CGAM as it is presented while comparing its applicability, validity and reliability using different kinds of consumer goods. In addition to that, it would be possible to assess whether the presented CGAM is simple and thus generalisable or too specific and therefore not applicable for any type of consumer good.

In the CGAM there are several variables focused on the factors influencing human behaviour, but also several variables which allow the representation of characteristics of consumer goods. While leaving the model with blank spaces might be seen as an easy way out, they strengthen the CGAM insofar as they allow specific inputs to correspond to the product being considered, thus allowing greater specificity and flexibility in use. Furthermore, these blanks create flexibility and easy application, which is crucial for manufacturers, who need to test possible acceptance of newly developed products in a quick and easy manner, that still generates valuable and reliable insights.

In order to test the validity of the presented model it needs to be applied in a specific use situation. In a following paper the conceptualised CGAM will be applied using “tea-to-go” as an example for consumer goods. As discussed, applying the model to a specific consumer good might require the addition of some variables that relate to the specific characteristics of the consumer good. Additionally, some of the embedded variables may need to be reconsidered and tested for their applicability in the context of the “tea-to-go” case.

Despite having conceptualized a consumer good acceptance model without having specified the type of consumer good, the contribution is not totally limited. As there is still need for theoretical adjustment and further exploration, the presented CGAM has great value for the German tea-industry, as they gave insights about challenging issues and key factors. Those have been greatly considered while developing the new variables for CGAM (Förster, 2017) and thus CGAM can be used to test the acceptance and it’s driver for tea-to-go.

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RETIREMENT FINANCIAL PLANNING: GENDER, AGE-RELATED, AND EXPENDITURE DIFFERENCES AMONG INDONESIAN HOUSEHOLDS

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Abstract

This study aims to determine which factors influence household perceptions of retirement planning decisions. Age, marital status, salary, level of education, loan payment, and savings habit will be identified as significant variables in the prediction. This study employed the logistic regression (logit) model, with the sample divided into those who have enrolled in a pension plan and those who have not begun to plan for a pension fund. The sample age range was 26 to 58 years old, with a total of 2,808 respondents. This study discovered that for the age range 26-35 years old, obtaining more education, being younger, earning higher salaries, having less loan obligation, and saving less, the household were more likely to have proper retirement planning. However, between the ages of 36 and 58, planning for retirement became more likely as they get older, gain more education, enter marriage life, and have more loan obligations.

Key Words

Retirement planning; pension fund; household; logit.

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INTRODUCTION

Longevity sounds promising and prosperous. According to the International Database on Longevity (2015), in developing countries, life expectancy has increased by more than 20 years over the last century. Globally, Indonesia had one of the top ten world's largest elderly population (Statistics Indonesia).

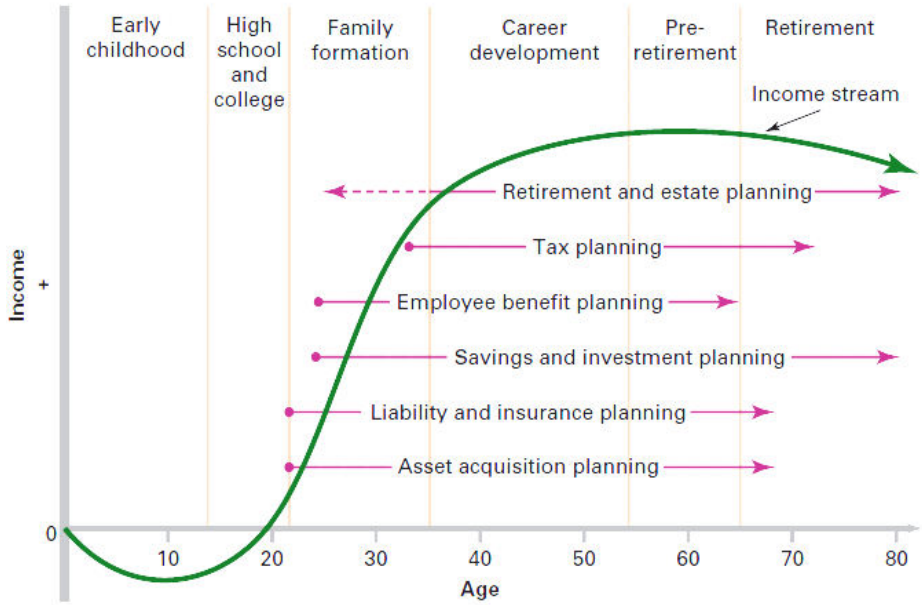
Life expectancy has risen dramatically while birth rates have fallen. Hence, Indonesia will be predicted to become an aging society over the next few decades. This prediction is a true assumption since it had been proven by the increase of life expectancy in Indonesia from 72.02 years in 2011 to 73.06 years in 2017, based on the report of Indonesia's Central Agency of Statistics (2017). This increase was due to several reasons, one of which was advances in medical science, such as the availability of antibiotic treatment, vaccines, and health care. Besides its causes, the increase of life expectancy results in the people who finally retire from their work. The retirement or pension makes the people have to pay their life. Pension funds can be a viable alternative to meeting needs and living the good life in retirement and offer an income assurance for people who are no longer working, with the amount determined by the number of contributions paid. This demonstrates how important pension funds can be in overcoming or mitigating the risk of dying prematurely or in old age.

The majority of people make three major faults when it comes to retirement planning. To begin with, most people start too late retirement planning in their late 30s or early 40s. Second, they spend less money since they do not believe that it is necessary to contribute significantly to pensions. Other financial pressures, such as real estate purchases, university tuition, and current life choices, can cause all errors at this time. Both faults result in lower expected retirement benefits. The last, most people make conservative investments in pension funds. Investing with a low expected level means eradicating high risk. As a matter of fact, the pension benefits obtained were meaningless when it came to meet every day needs throughout retirement period, and as a consequence, the pension payments gained cannot be considered to be sufficient to cover all expenses.

Financial planning, according to Gitman et al. (2011), is a dynamic process, which is defined as the processes of life changes. The life changes are the phases in life; for example, your financial needs at the age of 30 will just be different than it was when you turn 40, 50, or even 60. Financial planning needs to be dynamically adjusted to a phase which are going to be followed to avoid "financial shock”. Gitman et al. (2011) define the dynamic process of financial planning as a financial planning life cycle demonstrating that financial planning begins at the stage of family formation. Financial planning is not necessary in the early stages of life, such as childhood, high school, and college, because a person is still financially dependent on parents and does not generate any revenue. Only within the family formation phases would anyone normally start working, earning a stable income, and beginning to plan their finances. When a person reaches retirement age, his or her source of revenue begins to diminish, and financial planning begins to

deteriorate, increase the risk of getting less income, and a less comfortable lifestyle. The figure below shows that financial planning of someone's cash inflow decreases during the pension period.

Figure 1: Life Cycle of Financial Planning



Source: Gitman, Joehnk and Billingsley, Personal Financial Planning.

According to Kimiyaghalam, et al. (2017), retirement is the moment when an employee does not work after getting the standard age of retirement set by a country's laws or rules. According to Gitman et al. (2011), retirement must be planned for a long time before one approaches this stage. At this stage, when revenue is decreasing, financial targets such as maintaining a living standard, vacation, basic needs, and a variety of other expenses must be met. Carrying out proper financial planning during retirement is critical because it is a long term plan and a critical stage in one's life. According to Gitman et al. (2011), the most important objective participating in financial planning is good retirement living standards. They say retirement planning is central to financial planning when compared to another types of financial planning, and that pensions can be an important factor in achieving a comfortable life in the future.

According to Lawson & Klontz (2017), the Certified Financial Planner (CFP) Board's Financial Planning Practice Standards include six steps. The standards demonstrated the importance of evaluating personal situations such as retirement age, life expectancy, income, and financial health in terms of financial satisfaction, debt level, and saving plan. These standards assist financial planners in providing better recommendations to their clients. Thus, the aforementioned factors may have influenced people to plan their retirement.

LITERATURE REVIEW

According to Gracia Mata (2021), financial literacy had an effect on retirement planning among young adults in Mexico with gender acting as a moderator variable. The actual or intended implementation of several retirement strategies, including private pension funds, asset investing, government subsidies, and family assistance, is referred to as planning. Many young Mexican women still considered family and friends to be their primary source of financial support as they get older, especially as the number of economic dependents grows. Similarly, Zurlo (2021) discovered that unmarried women faced more financial challenges in retirement than married women.

Vivel-Búa et al. (2019) identified the factors influencing retirement planning in Spain. The study conducted 165,791 observations from 2008 to 2015 and used a probit tobit model. This study and discovered that while gender was not a significant determinant of the decision to save money for retirement in a private retirement plan, it had a negative and significant impact on the amount of money saved. Spanish women invested less in private pension schemes than men, which may be explained by their lower earnings.

In line with this, Mahdzan et al., (2017) investigated the factors influencing retirement planning and retirement portfolio choices, an area that has received little attention. Income, age, and future expectations were found to be strongly associated to the likelihood of retire behavior in Kuala Lumpur, Malaysia. Retirement planning was more likely to be implemented if people have faith in the country's financial system. A sample of 270 workforces in Malaysia was studied using logistic and ordered probit regression. While according to Onduko et al., (2015), financial literacy, earnings, and level of education of respondents were key variables of retirement planning in Nairobi, Kenya. Age and years of marriage, in contrast, had no significant influence on retirement planning. The most important factor that affected retirement planning decisions was financial literacy because it influenced both saving and portfolio selection. The study employed multiple regression on a sample of 158 people working in the formal sector who had saved for retirement.

Mansor et al. (2015) investigated the factors influencing retirement planning among Malaysian employees working in the health sector. The study revealed that age, education level, and income level were statistically significant and related to retirement planning, whereas gender had no significant impact on it. To investigate the relationship, they used demographic factors as determinants and cross tabulation analysis. The findings revealed that age increased retirement confidence, education allowed people to learn more about retirement planning, and a sufficient income was required to plan for retirement.

The same study was conducted by Rey-Ares et al. (2015) in Portugal and Spain. Using probit, they discovered that education, employment situation, living area, house ownership, and saving practices were all positively related, while financial risk aversion and right-wing political orientation were

negatively related. Ares et al. (2015) argued that after mortgages were paid off, households were more likely to save. The study included 1,808 individuals with an age range of 55.47. Besides that, Moorthy et al. (2012) demonstrated that the earlier generation (26-35 years) had a more positive attitude toward retirement planning and was not concerned about retirement. According to the findings, the factors influencing retirement planning behavior were age, educational level, level of income, goal clarity, viewpoint to retirement, and possible conflict in retirement. The study concluded that the ideal period to start doing retirement was range from the ages of 26 to 35. The study employed multiple regression on a sample of 300 working Malaysians ranging in age from 26 to 55 years.

Fontes (2011) used logistic regression to investigate factors influencing retirement planning in United States. This study discovered a positive and negative relation to retirement planning. The former consisted of age, education, male gender, housing, urban residence, married status, and employment, while the latter consisted of the number of children and immigrants. Hira et al. (2009) also used logistic regression to discover a positive relation, such as age, financial information, and becoming an early investor.

Devaney and Chiremba (2005) conducted research on retirement planning in the United States. The tobit model of logistic regression was used to analyze the relationship. This study discovered a positive relation among retirement planning and variables, such as age, education, risk tolerance, saver, planning horizon, married status, and white race, and a negative relation between retirement planning and independent variables, such as spending and self-employment. According to the study, obtaining additional education, willing to take risks, and saving more were all associated with having more money set aside for retirement. This study used spending versus income as study factors and discovered a negative relationship between retirement planning and spending. The more respondents spent than they earned, the less likely they were to make retirement plans.

Furthermore, Hurd (2003) explained that those who had low income throughout their working life who did not save would experience even lower levels of consumption in the years ahead and that they could raise long-term utility by reallocating spending from before to after pension. The data was collected from the Health and Retirement Study in 1992, and the study used the tobit model with a total of 12,652 respondents. According to Lum & Lightfoot (2003), respondents and spouse health were positively related to retirement planning. The logistic regression study also discovered that age, male gender, white and black race, education, and revenue were related to retirement planning among older workers.

As a result of the preceding literature on retirement planning behavior, researchers would want to conduct additional research into identifying factors influencing pension fund decisions, specifically in Indonesian households using IFLS5 from Rand Corporation Database by categorizing the sample age within the age ranges of 26-35 and 36-58. It is hoped that this study can discover the determinants of retirement planning behavior in Indonesian households since retirement planning is important for household

wealth.

DATA AND METHODOLOGY

This study used cross-section data from the Rand Corporation database. The information could be obtained from the IFLS5 questionnaires, which can be found at www.rand.org. The method used logistic regression, specifically the logit model. Purposive sampling was used to collect the data from respondents in Indonesia by using STATA. The sample was drawn by using the respective criteria: first, containing no missing values; second, excluding respondents with ambiguous answers; third, dismissing respondents under the age of 26; and finally omitting participants who did not reply to the question. By applying these criteria, the data that was originally collected 26,508 became 2,808 respondents.

According to Moorthy et al. (2012), the earlier generation age range of 26-35 years had a more positive attitude toward retirement planning and was not concerned about retirement; additionally, the study concluded that the ideal age range to begin doing retirement was between the ages of 26 and 35. Furthermore, according to the life cycle theory, financial stability after the age of 35 in the financial stage differed. As a result, the sample group in this study was divided into two age groups: 26-35 and 36-58 to determine the retirement financial planning among Indonesian households.

This study consisted of 1,335 male respondents (47.54%) and 1,473 female respondents (52.46%). Based on the total number of respondents, 95.51% of them were married and the remaining 4.49% were unmarried. The age distribution of the respondents was that 1,374 or 48.93% of respondents represented the ages between 26 and 35, while 1,434 or 51.07% of them represented the ages between 36 and 58. Based on the educational qualification level analysis, those who had elementary school holders were 603 (21.47%), junior high school holders were 381 (13.57%), senior high school holders were 982 (34.97%), and college/university holders were 842 (29.99%) respondents.

In terms of loan payments, 1,419 respondents (50.53%) had loan obligations, while 1,389 respondents (49.47%) did not have any loan payments. In terms of saving habits, 2,735 respondents (97.40%) had a saving habit, while the remaining (2.6%) did have any. Most workers were private workers represented by 1,858 respondents (66.17%) and the remaining consisted of government workers represented by 659 respondents (23.47%), casual workers in agriculture represented by 237 respondents (8.44%), and casual workers not in agriculture represented by 54 respondents (1.92%).

Retirement planning is the dependent variable. The respondent was asked, "What type of pension plan are you enrolled in?" This study would investigate whether respondents can improve their retirement planning by improving their level of education, budgeting, subjective perception, and anticipating the necessity for financial education. The relevant factors will be explained further.

Respondents' criteria included those who received pension funds as an employee and had enrolled in a pension plan. The responses were divided into two categories, namely 1 indicated that the respondent had started to make retirement plans and 0 indicated that the respondent had not begun to make retirement plans. This binary value was used to determine why an individual decided a retirement planning.

This study used the independent variables. The first independent variable was age (x_1_age) for the question "how old are you?". Age, as a demographic factor, is the most used variable in retirement planning studies. Based on the life cycle of financial planning, the age range was divided into two categories, namely 26-35 and 36-58 years old, to investigate the differences in behavior between them. The second variable was gender (x_2_gender) as another demographic factor for asking whether the respondents were male or female, which was coded 1 for male and 0 for female. The third variable was Marital Status (x_3_marstat) by classifying the study with 1 for "married" status and 0 for other than "married" status. Salary (x_4_salaries) was the fourth independent variable showing monthly earnings by asking the following question: "Approximately what was your salary/wage during the last month (including the value of all benefits)?". The fifth independent variable was education level (x_5_edulvl) by classifying the respondents into six categories: elementary school (12 years), junior high (15 years), senior high (18 years), college education (22 years), and university education (24 - 29 year). The sixth independent variable was Loan Payment (x_6_loan), which represented respondents' debt repayment spending by asking, "What is the total loan that has been paid in the last 12 months?". Finally, Saving (x_7_saving) was the seventh independent variable.

The following statements become the research hypothesis.

H_1: Respondent age had a significant impact on the likelihood of retirement planning.

H_2: Male respondents were more likely than female respondents to have retirement plans.

H_3: Married respondents were more likely to make retirement plans than unmarried respondents.

H_4: Salary had a significant influence on the likelihood of retirement planning.

H_5: Respondents with more years of education were more likely to plan for pension funds than those with fewer years of education.

H_6: Loan payments had a significant impact on the likelihood of retirement planning.

H_7: Saving habits had a significant impact on the likelihood of retirement planning.

EMPIRICAL FINDINGS AND DISCUSSION

When a predictor variable is a linear function of another independent variable in the same model, this is referred to as multicollinearity. The correlation between all independent variables were tested to see whether there was any

multicollinearity in the model. The model has no multicollinearity, as evidenced by this result.

Table 1: Correlation Matrix

	x1_age	x2_gender	x3_marstat	x4_salaries	x5_edulvl	x6_loan	x7_saving
x1_age	1.0000						
x2_gender	0.0956	1.0000					
x3_marstat	- 0.0180	0.0134	1.0000				
x4_salaries	0.0374	0.0018	0.0099	1.0000			
x5_edulvl	0.0254	0.0667	0.0144	0.0597	1.0000		
x6_loan	0.0158	0.0000	0.0142	0.0031	0.1243	1.0000	
x7_saving	0.0308	-0.0850	0.0010	0.0170	0.0330	0.0173	1.0000

Source: Rand Corporation, IFLS5.

Based on the results of table 1, the correlation coefficient among independent variables is 0.80 or less, meaning that multicollinearities did not occur in the data in this study. This indicates that in the model, there was no independent variable that was a linear function from another independent variable.

The Goodness of Fit test measures how accurately a model explains the correlation among the dependent and independent variables. Pseudo R^2 is one of the parameters used for the Goodness -of -fit test in logistic regression.

Table 2: Summary of Goodness of Fit based on Age Range

	Age 26-35	Age 36-58
Number of Observation	1374	1434
Pseudo R^2	0.2023	0.1659

Source: Rand Corporation, IFLS5

According to table 2, the Pseudo R^2 value in the age group 26-35 years (20.23%) is greater than in the age range 36-58 years (16.59%), indicating that the model with all predictor factors could better explain Indonesian households' decision to have retirement planning in the age range 26-35 years than in the age range 36-58 years.

The Likelihood Ratio was employed to assess whether all the predictor variables have an effect on the dependent variable, which is represented by a probability value greater than chi-square (Prob>chi^2). Following is the hypothesis:

H_0: All independent variables had no effect on the dependent variable under consideration.

H_1: All independent variables had an effect on the dependent variable being tested at the same time.

Table 3: Likelihood Ratio

	Age 26-35	Age 36-58
Wald chi^2	216.28	196.32
Prob > chi^2	0.0000	0.0000

Source: Rand Corporation, IFLS5.

Table 3 shows that H_0 is rejected with a 95% confidence level (Likelihood Ratio statistic is 0.0000), meaning that all seven predictor variables (age, gender, marital status, salaries, educational levels, loan payment, and saving habit) were indeed influencing household decisions to have retirement planning at the same time. The likelihood ratio value (Prob > chi^2) of 0.000 described how predictor variables in the model could simultaneously explain the retirement planning decisions of Indonesian households.

By examining Prob > chi^2 from each predictor variables, the partial test determines whether each predictor variable influences the dependent variable. The relations among independent and dependent variables are as follows:

Table 4: Partial Test

	Age 26-35	Age 36-58		Age 26-35	Age 36-58		Age 26-35	Age 36-58
Variables	Coefficient			P>z			Odd Ratio	
x_1_age	-0.0573	0.0582		0.0230	0.0000		0.9443*	1.0601*
x_2_gender	0.0865	-0.1159		0.5420	0.3570		1.0903	0.8906
x_3_marstat	-0.5046	1.1485		0.1110	0.0010		0.6037	3.1534*
x_4_salaries	3.11E-07	-1.50E-09		0.0000	0.1020		1*	1
x_5_edulvl	0.2389	0.2199		0.0000	0.0000		1.2698*	1.2459*
x_6_loan	-2.07E-09	3.17E-08		0.0420	0.0000		1*	1*
x_7_saving	-4.64E-09	2.08E-09		0.0410	0.3860		1*	1

*Significance at Confidence level = 95%
Source: Rand Corporation, IFLS5.

Age, salary, education level, loan payment, and saving habit influenced retirement planning behavior among people aged 26 to 35. For the age range 36-58 years old, retirement planning behavior was influenced by age, marital status, educational levels, and loan payment.

The following is the Equation:

$$\text{Pension Fund (age 26-35)} = -0.0573\text{Age} + 3.11\text{x}10^{-7}\text{Salaries} + 0.2389\text{EduLvl} - 2.07\text{x}10^{-9}\text{Loan} - 4.64\text{x}10^{-9}\text{Saving} \quad \ldots\ldots\ldots\ldots\ldots (1)$$

$$\text{Pension Fund (age 36-58)} = 0.0582\text{Age} + 1.1485\text{MarStat} + 0.2199\text{EduLvl} + 3.17\text{X}10^{-8}\text{Loan} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

The logit model's resulting coefficients cannot be directly interpreted. The coefficient's value is meaningless because it only indicates the direction of the predictor variable's influence on dependent variable. To interpret the coefficient values, the coefficients of the estimated logit findings must be changed into natural antilogarithm to acquire the odds ratio. Odd Ratios result is shown in table 4.

The odds ratio describes the ratio of two possibilities, that is the possibility of success and the possibility of failure. The slope sign above indicates the following statements:

1. The tendency of people in the age range 26-35 to have pension funds decreased by 0.9443 times for every year of age increase. In the age range 36-58, an increase in age developed the likelihood of having pension funds by 1.0601 times.
2. Married people between the age of 36 and 58 had a 3.1534 times greater chance of having pension funds. There was no effect of marital status on individual behavior in having pension funds for those in the ages of 26-35.
3. In the age range of 26-35, an increase in salary increased the likelihood of having pension funds by one.
4. Educational levels had a positive effect on retirement planning in both age groups. The odds ratio values showed that the higher the education level, the greater the likelihood of having pension funds in the age range of 26-35 and 36-58, respectively.
5. Among people aged 26 to 35, the likelihood of having a retirement plan decreased each time the loan payment increased by one. On the other hand, as loan payments rose by one percentage point, the number of people who plan for retirement rose.
6. The likelihood of people having retirement plans between the ages of 26 and 35 would decrease each time the respondent's savings increased by one.

This finding suggests that the relationship between all predictor factors and retirement planning variable could explain the majority of the theory. Age, marital status, salary, educational levels, loan, and savings were important factors to consider when planning a retirement in Indonesia. This study concluded that the appropriate age to begin implementing retirement planning varied from the age of 26 and 35.

Age, as a demographic factor, can explain the life cycle of financial planning and the theory of planned behavior. Age indicates which stage of the life cycle the respondent is currently in and can be used as a subjective norm that directs behavior. Respondents aged 26 to 35 had different results on their choice to save for retirement. Salary is a consideration for younger people in the transition phase of the financial planning life cycle because they do not have many financial responsibilities in their daily lives, so the younger they are, the more likely they are to invest in retirement funds. This is consistent with the discoveries of Huberman et al. (2007), which discovered a diminishing relationship of age and the decision to have retirement funds. Even though there were differences, the findings in this study were supported by previous studies. Age was not always a detriment to retirement planning; in the older group, age had a positive influence on retirement planning. Mansor et al. (2015) discovered a positive relation between age and retirement planning behavior among respondents aged 36-58 years, as did Moorthy et al. (2012), Fontes (2011), Hira et al. (2009), and Devaney and Chiremba (2005). This behavior was in accordance with the life-cycle theory. According to the life-cycle economic approach, people tend to invest in pension funds as they get older. Individuals are more likely to be motivated to take action for retirement as they get older, so age can help pre-retirees plan their retirement.

Marital status is regarded as a subjective norm that influences one's behavior when he or she married. According to this study, marital status was not a statistically significant predictor of retirement planning in the younger group, but married respondents were more likely to plan for retirement than unmarried ones in the older group. Married respondents had a greater tendency to be concerned regarding their family's financial stability, causing them to be more likely to invest in retirement planning. In other words, the decision to plan for pension was made together within the marriage. Both outcomes were consistent with the life cycle of financial planning, as awareness of retirement planning begins in the phase of career development that is over 35 years old.

One of the demographic factors that influences both younger and older people's retirement planning behavior is educational level. This is in line with previous research findings (DeVaney & Chiremba, 2005; Fontes, 2011; Hira et al., 2009; Moorthy et al., 2012; Mansor et al., 2015; Onduko et al., 2015). Education level can be considered as attitude toward retirement planning behavior because education level can help to understand retirement behavior. Individuals with a higher education level are more likely to have pension funds because education allows individuals to explore more information about retirement planning, and the sources of information influence their decision.

Another financial variable is loan and saving habits, both of which have a negative impact on younger people's retirement planning behavior. As previously stated, income becomes a consideration for younger groups in the transition phase of the financial planning life cycle when they have many financial responsibilities in their daily needs (loan and saving), resulting in insufficient funds. As a result, the likelihood of them using retirement funds is low or difficult to predict. Ares et al. (2015) and DeVaney & Chiremba (2005) used saving habits as a factor to determine retirement planning and discovered that those who save had a higher likelihood of planning for retirement.

Loan variables affect retirement planning behavior in the older and younger group, but in the opposite direction. The outcome was in accordance with the previous studies which used categorical spending variables rather than numerical spending variables like the one used in this study (DeVaney & Chiremba, 2005; Fontes, 2011; Rey-Ares et al., 2015). However, the results showed the same effect on retirement planning in the younger group but having a different positive relationship in the older group. The behavior was quite fascinating that individuals were likely to have pension funds regardless of the other expenses that they must meet. Based on the financial planning life cycle, respondents between the ages of 36 and 58 were more likely to have a pension plan, despite rising loan payments.

Gender variable does not significantly affect an individual decision in making retirement planning. This can be observed from the respondent readiness of pension funds plan. Retirement readiness is a cognitive marker for behavior from rejection or support for change efforts and maturity points in the form of preparedness, readiness, and maturity to be able to accept the transition to a new lifestyle, in this case it always involves changing roles,

changing desires and values, and changes to the individual's lifestyle that manifest in the form of behavior (Safitri, 2013). From the sample, employees who had retirement preparedness with female gender were 435 employees (29.53%), and male were 430 employees (32.21%). Thus, it can be concluded that employee retirement readiness in both genders were equally for not being concern in preparing their future retirement planning.

CONCLUSION

The theories presented in this study can explain retirement planning behavior. Based on the financial planning life cycle, retirement planning becomes more important as people reach the age of 36, the career development stage. The financial planning process can influence retirement planning behavior because it evaluates financial status such as income, savings, and loan payments. This study discovered that households with more education, being younger, earning higher salaries, having less loan obligation, and saving less were more likely to have saved for retirement (for age group of 26-35).

Based on the findings of this study, the ideal age range for Indonesians to begin retirement was between the ages of 36 and 58. This age group had entered the career development stage and was more concerned with financial planning, particularly retirement. Outcomes are consistent with the financial planning life cycle, as awareness of retirement planning begins in the phase of career development that is over 35 years old.

In the 35-58 age group, obtaining more education, as they get older, being in marital life, and having more loan obligations would most likely influence household decisions to have retirement planning. This study discovered that when income increased in the early stages of life, it tended to determine retirement planning. The theory of planned behavior dominated in explaining retirement behavior, as evidenced by the strength of the influence of age, marital status, and education level. People's awareness of retirement planning behavior will increase as they get older, married, and more educated.

The findings could help policymakers understand the factors that influence retirement planning behavior. Any policy implementation aimed at assisting individuals in adequately preparing for retirement should consider the fact that different groups have different retirement saving behaviors. This study showed once again that behavioral approaches play a significant role in retirement planning behavior without ignoring the influence of such financial variables. It is suggested to encourage retirement planning behavior by increasing people's knowledge of retirement planning. These findings help people understand the significance of retirement planning. In general, the most influential variable is education level. It is necessary for educational institutions to educate people about the importance of retirement planning.

Although some facts were discovered, this study still had the following limitations. First, due to a cross-sectional study, it cannot be observed over

time, it can only capture retirement behavior at a specific point in time. Second, while this study is being conducted using secondary data, using primary data for specific purposes such as questioners will allow the study to become more accurate in terms of the study objective.

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ASSESSING THE ROLE OF PERCEIVED VALUE ON PURCHASE INTENTION ON LIVESTREAM PLATFORMS

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Abstract

E-commerce livestreaming is one of the fastest-growing types of commerce today. Along with the development of the IT industry, wireless networks covering the whole country with low capacity costs have led to the strong growth of livestreaming activities. This article evaluates the factors affecting consumers' purchase intention through e-commerce livestreaming and examines the mediating role of perceived value in those relationships. The data were collected from April to June 2021 with 217 valid questionnaires. The results show that the components of perceived value (functional and emotional) positively mediate the relationship between interactivity, content, entertainment, opinion leader and promotion and purchase intention. As a result, entertainment has the most substantial impact on perceived emotional value, and content has the most decisive effect on perceived functional value. In contrast, promotions had the lowest impact on perceived functional and emotional value. This surprising outcome shows the difference between E-commerce livestreaming and other forms.

Key Words

Livestream; perceived value; purchase intention; interactivity; entertainment.

INTRODUCTION

Livestreaming is a form of online communication and transmission method that collects, releases, and views video information simultaneously in real time on the internet (Wang, 2017). Along with the development of the IT industry, wireless networks covering the whole country with low capacity costs have led to the strong growth of livestreaming activities. Therefore, an increasing number of livestreaming platforms with superior features attract a growing number of consumers. In recent years, the livestream has been continuously improved with increasingly diversified content and rapid development. Many industries today, such as education, games, finance, and sports, use livestream tools to reach consumers. E-commerce platforms, video-sharing platforms and short video platforms have launched livestream features to use the advantages of livestreaming to attract users. Some famous stores in livestream e-commerce, such as Jessica Alba's The Honest Company (on Amazon Live), Wayfair (on YouTube), and The Fresh Market, show that this business form has excellent potential.

E-commerce livestreaming is one of the fastest-growing types of commerce today. It combines livestreaming and e-commerce to sell products during online streaming (Wang, 2017). Kang et al. (2021) argue that e-commerce livestreams are a form of e-commerce, with the primary marketing tool being live broadcasts. In e-commerce livestreaming, the master of ceremonies (MC) can interact in real time with the audience (Hou et al., 2019). Therefore, e-commerce livestreaming has advantages over traditional e-commerce in terms of interactivity and conversion rate (Xu et al., 2021). E-commerce livestreaming gathers consumers together to create a strong interaction with a high frequency between sellers and buyers. Communicating according to the group effect helps e-commerce livestreaming stimulate consumers to buy more than in traditional e-commerce (Mike, 2016). The multidimensional information characteristics, sharing of experiential content, and the closing atmosphere of e-commerce livestreaming effectively improve the order conversion rate. Factors including the aspects of the e-commerce platform, the characteristics of the interface of the MC livestreaming, and the interaction of the livestream MC affect perceived usefulness, thereby positively affecting the intention to continue to use the e-commerce livestreaming. According to Meng (2012), compared to traditional e-commerce, the livestreamed e-commerce is significantly superior in all aspects, such as product introduction, similarity, direct cooperation, and enhancing the consumer experience.

Currently, most studies on e-commerce livestreaming by scholars have researched the current status and policies of livestream e-commerce development, the application of livestream e-commerce in other industries, or the sales effectiveness of e-commerce livestreaming from a brand perspective. However, there are few studies on e-commerce livestreaming that analyse consumer behaviour. With the development of online shopping, consumers' information collection methods and channels are highly diverse. For example, the internet has changed consumers' shopping habits, and the psychology of consumers has since altered accordingly. From the

psychological aspect of consumers, this study evaluates the factors affecting consumers' purchase intention through e-commerce livestreams, thereby adding to studies related to consumer psychology and purchase intention.

LITERATURE REVIEW

Purchase Intention

Fishbein and Ajzen (1975) first introduced the concept of behavioural intention, which manifests each person's willingness to perform a specified behaviour. It is considered the premise that directly leads to behaviour. Mirabi et al. (2015) argue that purchase intention is the impulse to buy a particular product in a particular buying environment. Shah et al. (2012) gave a comparative definition, asserting that purchase intention is a process of choice, expressing the motives that indicate why the customer buys a particular product. Ghosh (1990) argues that purchase intention is an essential predictor of consumers' purchasing decisions. Since purchase intention can help predict consumers' purchasing decisions, it is of practical importance to study the factors affecting consumers' purchasing intentions. Therefore, it allows managers to develop appropriate strategies in the sales process to promote consumers' buying decisions.

Along with the rapid development, many scholars have researched online shopping intention. According to Salisbury et al. (2001), online purchase intention is one factor that motivates customers to buy online. According to Close and Kukar-Kinney (2010), online purchase intention comes from purchase intention. Thus, the intention to purchase online is the certainty of consumers who will buy over the internet. Meskaran et al. (2013) defined online purchase intention as a customer's willingness to purchase over the internet.

Currently, when researching the online shopping intentions of consumers, scholars focus on two factors: trust and perceived value. Chen (2012) studied the influence of personal identity and trust on online purchase intention, examining the factors affecting consumers' online purchase intention. Personal value is measured by value, perceived sacrifice, and trust, including ability, benevolence and honesty. Kawet et al. (2017) explain that brand identity and trust greatly influence product purchase intention, and part of the influence of value and trust will contribute to purchase intention.

Perceived value

From the 1990s onwards, the competition between businesses has become increasingly fierce. As a result, the customer's position is increasingly valued, and the importance of the customer's perceived value is increasingly confirmed. Therefore, consumers' perceived value is the object of many scholars' research. Zeithaml (1988) defined the perceived value of customers as the overall assessment of the usefulness of a product based on the perception of what is received and what is spent. Meanwhile,

Anderson and Sullivan (1993) define customer perceived value as the perceived monetary value of the technical, economic, service and social benefits that customers receive compared to the price they pay for a product, taking into consideration the prices and offers of available suppliers. Thus, the buyer's perception of value is a description of the balance between the quality of the product or the benefits they perceive from the product and the cost they pay for the product. Butz and Goodstein (1996) argue that the customer's perceived value is the emotional relationship established between the customer and the supplier after the customer has used a product or service of the supplier and find that the product or service creates added value.

The concepts of customer perceived value of Zeithaml (1988) and Woodruff (1997) are developed from a rational point of view, comparing two aspects: benefits received and value spent. However, many researchers believe that emotional factors also influence customers in the consumption process. Therefore, many researchers measuring customers' perceived value have used a multidimensional approach. Holbrook and Hirschman (1982) pointed out two aspects of perceived value: emotions and pragmatics. Sheth, Bruce and Barbara (1991) identified five dimensions: functional value, social value, emotional value, intellectual value, and conditional value. Sweeney and Soutar (2001) identified four dimensions: social value, emotional value, perceived quality, and perceived price. Petrick (2003) studies and tests the relationship between monetary and nonmonetary prices, reputation, service quality and emotional response to customers' overall perceived value of the service. Thus, when studying consumers' perceived value, it is necessary to consider the rational considerations of consumers. At the same time, paying attention to consumers' emotional needs is also necessary.

In recent years, along with the explosive development of the internet and the e-commerce industry, an increasing number of scholars have studied consumers' perceived value when shopping online. When researching aspects of consumers' perceived value when buying online, Dong and Yang (2008) argued that perceived value has three dimensions: consequential value, procedural value and emotional value. Deng (2015) divides perceived value into four aspects with priority: social value, quality value, service value, and price value. In studying the relationship between consumers' perceived value and online interactions, Sun (2016) concluded that perceived value includes three aspects: functional value, emotional value and perceived risk. After referring to previous studies and considering multidimensional research from rational and emotional perspectives, this article studies two aspects of consumers' perceived value in online shopping: functional and emotional.

The results of Xu et al. (2020) demonstrated that perceived perception positively affects consumers' purchase intention. In an e-commerce livestream, the MC's consultation will provide consumers with information and knowledge about the product and, at the same time, share their own user experiences, helping consumers to feel more about the functional value of the product. Many studies also consider the perceived quality of products

by consumers as an important factor constituting the perceived value of consumers. For example, in the process of watching livestreaming, through the process of self-observation, the introduction of MC and the interaction of other buyers will shape the perceived functional value of the consumer towards the product. When consumers realise that the quality of the product is guaranteed, they will have a greater intention of buying it. Therefore, the first hypothesis is as follows:

H1: Perceived functional value has a positive effect on purchase intention.

Research by Chen and Lin (2018) proves that perceived value positively impacts consumers' purchase intention. Xu et al. (2020) also confirm that perceived preference positively affects consumers' purchase intention. While watching the livestream, customers have positive feelings such as fun and excitement. Thus, the stimuli that consumers receive during livestream viewing will change consumers' emotions, affecting consumers' purchasing intentions. Therefore, the article proposes the following research hypothesis:

H2: Perceived emotional value has a positive effect on purchase intention.

Interactivity

Interactivity is a prominent feature of e-commerce livestreams, so it plays a critical role in the e-commerce livestream environment. For example, customers can interact directly with MC through the chat interface. Interactivity is the exchange of activities between consumers and MCs or between consumers through asking questions, answering, liking, sharing or mini-games. Sun (2016) proves that interactivity positively affects perceived functional and emotional value. In an e-commerce livestream, through the interactive process, consumers will understand the product's features more clearly and vividly, increasing their interest in the product. From the above arguments, the following hypothesis is proposed:

H3a: Interactivity has a positive effect on perceived functional value.
H3b: Interactivity has a positive effect on perceived emotional value.

Promotion

Promotion is a business tactic often used in e-commerce livestreams. While watching livestreams, consumers can enjoy exclusive discount offers. Online stores often use deals or other promotional activities to stimulate consumers' buying action. Promotions in this study are all promotional activities during livestreaming, including preferential discounts, gifts, and vouchers, exclusively for consumers watching the livestream. Hao et al. (2008), when studying the impact of the discount effect on promotion, found that the form of product price discounts brings higher perceived value to consumers, both in terms of functional and emotional value. Therefore, the following hypothesis is proposed:

H4a: Promotion has a positive effect on perceived functional value.
H4b: Promotion has a positive effect on perceived emotional value.

Entertainment

Currently, people's quality of life continues to improve daily. Consumers shop not only to meet their shopping needs but also to meet their entertainment needs. Therefore, while watching livestreams, consumers also have particular entertainment needs. The entertainment concept includes stimuli that bring joy and comfort to consumers during livestream viewing. Xu et al. (2020) proved that entertainment positively impacts perceived emotional and functional value. During livestreaming, the seller can use the form of conveyed content, humour and an attractive style of the MC to create a fun and entertaining experience for consumers to enhance the perceived emotional and functional value of product features. The related hypotheses are as follows:

H5a: Entertainment has a positive effect on perceived functional value.
H5b: Entertainment has a positive effect on perceived emotional value.

Content

Content refers to useful information or knowledge about specific aspects consumers receive while watching the livestream. During livestreaming, the MC provides product information more comprehensively and vividly while providing expert knowledge, which helps consumers make more reasonable purchasing decisions. In addition, it improves shopping efficiency for consumers. Xu et al. (2020) demonstrate that content positively affects perceived emotional and functional value. Thus, the new hypotheses are stated as follows:

H6a: Content has a positive effect on perceived functional value.
H6b: Content has a positive effect on perceived emotional value.

Opinion leader

Opinion leaders are people who regularly provide objective information in a particular field that has a specific influence on many others. The public opinion leader in this article is only the MC, who, during livestreaming, has professionally provided information about products or services to consumers. The results of Jia (2019) show that the consciousness, affection and knowledge of livestream MCs positively affect consumers' trust. Meng (2012) proves that opinion leaders' trust positively impacts professionalism, product knowledge, interactivity, and popularity. In e-commerce livestreaming, many brands have invited famous people such as singers, actors, and influential people on social networks to take on the role of livestream MCs. They are professional and highly effective people called

opinion leaders. Research by Xu et al. (2020) has demonstrated that opinion leaders positively impact perceived emotional and functional value. The subsequent research hypotheses are stated as follows:

H7a: Opinion leadership has a positive effect on perceived functional value.
H7b: Opinion leadership has a positive effect on perceived emotional value.

RESEARCH METHODOLOGY

This article uses Google Forms to build a survey and then sends the link via email, Zalo, Messenger, and Viber to the survey subjects. At the same time, the author printed the paper survey to send to the respondents who could not access it through the above methods.

The study used structural equation modelling (SEM) to test the hypotheses. According to Hair et al. (2010), the minimum sample size should be 50 or more, and the desired ratio is five observations for each variable. According to Kline (2015), a sample size below 100 is small, from 100–200 is medium and above 200 is large. Thus, based on the opinion of Hair et al. (2010), the minimum sample size of this study should be greater than 5x9=45 samples. According to Anderson and Gerbing (1988), a sample size of 150 or more is acceptable. From the above arguments, the article collects 200 survey samples to increase the scales' reliability. The survey sample was selected by convenience sampling, and the sample selection criteria were those who had watched e-commerce livestreaming. The observed variables in the scales all use a 5-point Likert scale with scores ranging from 1 to 5: 1 - Strongly disagree, 2 - Disagree, 3 - Neutral, 4 - Agree, to 5 - Strongly agree.

The interactivity scale is adjusted from the study of Lin et al. (2017) and Chen and Lin (2018), including four observed variables. The promotion scale also has four observed variables, a combination of Jiang (2019) and Wang (2020). The content (3 items), entertainment (3 items) and opinion leader (4 items) scales are inherited from Jiang (2019), Chen and Lin (2018) and Meng (2012), respectively. The perceived functional value and perceived emotional value scales with three items were borrowed from Meng (2012), and the purchase intention scale was built from reference to the studies of Lin et al. (2017) and Lin (2017).

The data sample was collected from April to June 2021. This study collected 263 survey questionnaires, of which 217 votes passed the filtered question, and the percentage of votes that failed the filtered question was 17.5% because they reported that they never watched the livestream. Among the respondents, there were 166 female respondents, accounting for 76.5%. A total of 26.7% of respondents were 18- to 25-year-olds, 21.2% were between 26 and 30 years old, 28.1% were between 31 and 35 years old, and 23.5% were over 35 years old. Regarding income, 21.7% of respondents received below 200 EUR/month, 30.4% had income from 200 EUR to under 400 EUR, 34.1% had income from 400 EUR to under 800 EUR, and 13.8% had revenue of 800 EUR or more. In terms of educational

qualifications, 6.9% of the candidates have a high school degree, 18.9% of the respondents have a college/vocational level, 61.3% of the respondents have a university degree, 11.5% students have a Master's degree, and 1.4% of the candidates have other educational qualifications. Regarding the average number of online purchases a month, 17.5% of candidates shop less than once, 49.3% buy from 1 to 3 times, and 33.2% of candidates shop more than seven times a month.

RESULTS AND DISCUSSION

Data were analysed using partial least squares structural equation modelling. Hair et al. (2019) suggested that two phases of the PLS-SEM assessment process should be implemented. Phase 1 is a measurement model assessment with analytical steps such as reliability, convergent and discriminant validity, and multicollinearity. Phase 2, Structural model assessment, includes an explanatory power check (R^2) and path coefficient assessment.

Measurement Model Assessment

According to Hair et al. (2017), when assessing the internal stability of the scale, both Cronbach's alpha and the composite reliability coefficient should be considered. The larger the Cronbach's alpha coefficient is, the higher the internal consistency reliability. According to Hair et al. (2014), Cronbach's alpha coefficient needs to be greater than 0.7. The author's data analysis results in Table 1 show that the scales have Cronbach's alpha in the range from 0.838 to 0.947, all greater than 0.7. In addition to using Cronbach's alpha coefficient, the scale's reliability is also evaluated through the composite reliability coefficient. Composite reliability is best when it has a value of 0.7 or higher (Hair et al., 2010). In Table 1, the reliability of the scale ranges from 0.892 to 0.966, both greater than 0.7, which shows that the scales used are satisfactory.

Table 1: Reliability, convergent validity and multicollinearity test

	CA	CR	AVE	Outer loadins	VIF	R^2
Interactivity	0.838	0.892	0.673	0.790–0.845	1.716–1.977	
Promotion	0.887	0.922	0.747	0.842–0.885	2.363–2.767	
Entertainment	0.884	0.927	0.810	0.878–0.924	2.224–3.344	
Content	0.882	0.927	0.809	0.880–0.917	2.177–2.860	
Opinion leaders	0.880	0.917	0.735	0.826–0.881	2.074–3.138	
Perceived functional value	0.947	0.966	0.905	0.943–0.960	2.244–2.991	0.512

Perceived emotional value	0.88	0.92	0.809	0.881–0.922	2.200–3.672	0.644
Purchase intention	0.93	0.95	0.885	0.935–0.945	2.744–3.234	0.627

Source: Own survey.

This study assessed convergent validity through the outer loadings of observed variables and average variance extracted (AVE). The AVE coefficient needs to be above 0.5, and the outer loading needs to be greater than 0.7 for the scale to converge (Hair et al., 2017). The results in Table 1 show that the scales' AVE and outer loading indices are more significant than 0.7. This result indicates that the scale variables converge with the research concepts.

Table 2: Fornell-Larcker criterion

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Perceived emotional value	0.900							
Perceived functional value	0.731	0.951						
Entertainment	0.679	0.549	0.900					
Promotion	0.608	0.522	0.546	0.865				
Opinion leader	0.630	0.590	0.496	0.571	0.857			
Content	0.686	0.654	0.606	0.631	0.643	0.900		
Interactivity	0.642	0.557	0.569	0.504	0.546	0.652	0.821	
Purchase intention	0.718	0.721	0.592	0.629	0.631	0.735	0.594	0.941

Source: Own survey.

In PLS-SEM, the discriminant validity is evaluated based on the Fornell-Larcker criteria. The square root of AVE must be greater than the intercorrelation coefficient between concepts (Fornell & Lacker, 1981). The results shown in Table 2 show that the square root AVE of each concept is larger than the correlation coefficient of that concept and others. Therefore, the scale meets the discriminant condition.

Structural Model Assessment

Table 3: Bootstrapping analysis

Path Coefficients	**β**	**P Values**	**Results**
Interactivity → Perceived functional value	0.123	0.070	Rejected
Interactivity → Perceived emotional value	0.186	0.007	Accepted
Promotion → Perceived functional value	0.060	0.427	Rejected

Promotion → Perceived emotional value	0.128	0.024	Accepted
Entertainment → Perceived functional value	0.156	0.043	Accepted
Entertainment → Perceived emotional value	0.300	0.000	Accepted
Content → Perceived functional value	0.302	0.000	Accepted
Content → Perceived emotional value	0.179	0.011	Accepted
Opinion leader → Perceived functional value	0.218	0.003	Accepted
Opinion leader → Perceived emotional value	0.191	0.003	Accepted
Perceived functional value → Purchase intention	0.215	0.021	Accepted
Perceived emotional value → Purchase intention	0.310	0.000	Accepted

Source: Own survey.

R^2 is an index that measures the extent to which the input variables explain the change in the dependent variable. The value of R^2 ranges from 0 to 1, and the closer it is to 1, the greater the independent variable explains the dependent variable. According to Henseler et al. (2009), there are three R^2 ratings: 0.25 is weak, 0.5 is moderate, and 0.75 or higher is high. The results in Table 1 show that R^2 ranges from 0.512 to 0.644, which is assessed as the average level of impact. The concepts of interaction, promotion, content, opinion leader, and entertainment explained 64.5% of the variation in perceived emotional value and 51.2% of the variation in perceived functional value at statistical significance level of 5%; the rest is unexplained due to other factors not included in the model. For example, perceived emotional and perceived functional value explained 62.7% of the variation in purchase intention via livestreaming.

Multicollinearity was assessed using the variance inflation factor (VIF). If this index is less than 10, the model does not experience multicollinearity among the independent variables (James et al., 2013). Thus, the results in Table 1 show that the VIF value is less than 10, indicating no multicollinearity between the independent variables.

The study uses the bootstrap method of resampling from the original sample to generate a large enough number of secondary samples (bootstrap samples), from which there is a basis for evaluating the accuracy of the statistical parameters of the original model. The author uses the bootstrapping method repeated 5,000 times and then considers the path coefficient and the P value. The path coefficient value ranges from -1 to +1. The closer this value is to +1, the stronger the positive relationship, and vice versa. In addition to testing the hypothesis, the author considers the P value. If the P value ≤ 0.05, the level of impact is statistically significant, and the hypothesis is accepted; otherwise, if the P value > 0.05, the level of effect is not statistically significant, and the hypothesis is rejected.

The path coefficient results in Table 3 show that interaction, promotion, entertainment, content, and opinion leader positively impact perceived emotional and functional value. Entertainment has the strongest impact on perceived emotional value (β = 0.300), and content has the strongest impact on perceived functional value (β = 0.302). In contrast, promotions had the lowest impact on perceived functional value (β = 0.060) and perceived

emotional value (β = 0.128). Perceived functional value and perceived emotional value positively impact purchase intention through livestreaming, in which perceived emotional value (β = 0.310) has the strongest impact on purchase intention, followed by perceived functional value (β = 0.215).

Regarding the p values, the results in Table 3 show that the relationship between interactivity and promotion with perceived functional value has p values > 0.05. Hence, the relationship between these variables is not statistically significant. The remaining relationships between the independent and intermediate variables (perceived emotional value and perceived functional value) all have p values < 0.05; thus, these hypotheses are verified. The relationship between perceived emotional value and perceived functional value with purchase intention through livestreaming is statistically significant with p values < 0.05; thus, the hypotheses are confirmed.

The results of this study show that interactivity has a positive impact on consumers' perceived emotional value. This result is similar to the results of Sun (2016). The interactive activities in livestreaming have made consumers happy and excited, thereby increasing purchase intention. However, promotion does not affect perceived functional value, in contrast to the results of Hao et al. (2008). The reason may be that consumer psychology does not believe in the quality of the product, so promotion does not affect consumers' confidence, and advancements in livestreaming make consumers feel excited because of low prices but do not affect consumers' thoughts about product quality.

The results of this study are similar to those of Yao and Qin (2010) and Xu et al. (2020). The study shows that entertainment, content and opinion leaders positively affect consumers' perceived functional and emotional value. This means that the higher the entertainment atmosphere during livestreaming, the higher the customer's trust, sympathy and perception of product quality. This study's entertainment concept includes stimuli that bring a sense of joy and comfort to consumers during livestream viewing. Along with socioeconomic development, when participating in shopping activities, consumers also meet shopping needs and can relax and relieve stress. Currently, the sales livestream program on e-commerce floors has diverse content and is well invested in many entertainment programs, with rich content, trend updates and the tastes of consumers, increasing the amount of interaction with customers. This helps increase traffic with viewers,which will result in more customers.

CONCLUSIONS

This study proves that interactivity positively affects perceived emotional value, and content quality is the most important factor affecting consumer trust, perceived functional value and perceived emotional value. However, products still play a vital role in the e-commerce livestreaming program. For example, when consumers watch the e-commerce livestreaming, the most critical purpose is to learn about the product by asking questions to the MC

and talking to other consumers. Therefore, during livestreaming, MCs need to understand and improve their ability to introduce product features, promptly answer consumers' questions, and provide them with more intuitive information outside the product's image. Finally, they must highlight the product's advantages and help consumers make purchasing decisions more effectively. During the e-commerce livestreaming, the MC also must provide more product-related knowledge to consumers so that they can both shop and perceive added value while watching the livestreaming programs.

Research has shown that the higher the level of professionalism of the opinion leader, the more consumers trust the product and the greater the perceived functional and emotional value. Therefore, when brands and sellers choose MCs, it is necessary to choose people with a certain degree of popularity, influence and high professionalism in the product-related field to attract more customers. In addition, MCs' endorsement and influence help them have a clearer perception of the product's value, improve consumer confidence in the product, and increase the product's transaction volume during the livestreaming.

Currently, the livestream feature is becoming increasingly popular, and consumers increasingly demand the content and interactivity of livestream programs. Monotonous product explanations, traditional comments and answers, and some price reductions have not been able to meet users' needs. Platforms providing livestream features need to be researched and developed to promote innovative forms of livestreaming, such as using VR, AR and other technologies to convert livestream programs from "two-dimensional" to "three-dimensional". In addition, livestreaming provides consumers with more accurate and efficient product information with a more prosperous, immersive viewing experience.

Perceived functional value and perceived emotional value positively influence consumers' purchase intention through livestreaming. Consumers who watch e-commerce livestream programs can more intuitively feel the quality of the product and are interested in the product, thereby generating a desire to buy. However, products are still the core factor determining the success of the livestream program. For example, e-commerce livestream platforms need to clarify the quality standards of livestream products and, at the same time, conduct tests on products introduced in livestreaming to ensure that the quality of the products is up to standards. Thus, sellers need to provide customers with products that meet their needs at a strictly controlled rate, strengthen the attachment of consumers who buy via livestreaming, and attract loyal customers, thereby promoting transactions of other products.

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