RIGA TECHNICAL UNIVERSITY

Ludmila Kasperoviča

ASSESSING THE FACTORS INFLUENCING EARNINGS MANAGEMENT OF LATVIAN SMALL AND MICRO-CAPITAL COMPANIES IN THE DIGITAL ERA

Summary of the Doctoral Thesis

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Faculty of Engineering Economics and Management

Institute of Economics and Entrepreneurship

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DOCTORAL THESIS PROPOSED TO RIGA TECHNICAL UNIVERSITY FOR PROMOTION TO THE SCIENTIFIC DEGREE OF DOCTOR OF SCIENCE

To be granted the scientific degree of Doctor of Science (Ph. D.) in Social Sciences (Economics and Management), the present Doctoral Thesis has been submitted for defence at the open meeting of the RTU Promotion Council on 6 June 2025 at the Faculty of Engineering Economics and Management of Riga Technical University, 6 Kalnciema Street, Riga, Latvia.

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DECLARATION OF ACADEMIC INTEGRITY

I hereby declare that the Doctoral Thesis submitted for review to Riga Technical University for promotion to the scientific degree of Doctor of Science (Ph. D.) in Social Sciences (Economics and Management) is my own. I confirm that this Doctoral Thesis has not been submitted to any other university for promotion to a scientific degree.

The Doctoral Thesis has been written in English. It consists of an Introduction, 4 chapters, Conclusions, 78 figures, 23 tables, five formulas, and 12 appendices; the total number of pages is 210, including appendices. The Bibliography contains 166 titles.

Contents

Introduction

Relevance of the topic

The Latvian National Development Plan 2014–2020 and the Latvian National Development Plan 2021–2027 (Par Latvijas Nacionālo attīstības plānu 2014.–2020.gadam, 2012; Par Latvijas Nacionālo attīstības plānu 2021.–2027. gadam (NAP2027), 2020) states that Latvia is recognised as a country whose business structure consists mainly of micro, small and medium-sized enterprises.

At the end of 2021, 132,859 companies were registered in the Latvian Commercial Register (Register of Enterprises Open Data, 2024), with limited liability companies (LLC) being the most popular form of business, accounting for 90.83 % of all registered companies.

Of all registered capital companies (JSC and LLC), only 77,816 companies, or 64 % of the whole number, reported revenue above 0 in their annual reports, with a total company revenue of EUR 73.052 billion in 2021. Compared to the turnover of the world's top companies, the annual revenue of all Latvian capital companies is around 15 % of the annual revenue of the world's top companies. For example, according to Fortune (Global 500, 2023), the largest retail chain, WALMART's annual revenue in 2021 amounted to USD 559.181 billion.

The largest part of the total revenue of Latvian capital companies in 2021 is represented by only 234 capital companies, accounting for 46 % of the total, while the group of small and micro-capital companies accounts for only 32 % of the total annual revenue, representing 76,582 capital companies and 98.41 % of all capital companies that have submitted their annual accounts.

To ensure the competitive advantage and sustainability of Latvia's small and micro-capital companies, new innovative approaches must be found to increase revenues while reducing costs.

According to several experts, increasing revenue through the digitalisation of the business model should be the first priority (Digital Transformation of Industries, 2016, p. 45), and companies that have reached a maximum level of digital maturity can reduce costs by up to 30 % (Digital Transformation of Industries, 2016, p. 45; Field et al., 2014, p. 7).

According to the European Commission's publication on the Digital Economy and Society Index (DESI) 2022 (The Digital Economy and Society Index (DESI), 2023), the digital development of enterprises in Latvia is below the EU average. It ranks 23rd out of 27 Member

States in integrating digital technologies in enterprises. Almost all its indicators are below the EU average.

Since the 1990s, the digital impact has influenced the business environment and created new opportunities for people. The Internet has changed human behaviour and communication, moving physical things into the virtual environment. Society constantly tries to find new ways to extend cooperation and organise economic activities by interacting with the virtual and real worlds (Wasko et al., 2011, p. 8).

The strategy of a business organisation is no longer limited to the internal view of the company but is oriented toward the business environment. Today, managers must see themselves as part of an organism operating in a business ecosystem (Lusch & Nambisan, 2015, p. 12).

The digital transformation of the business model affects not only technology companies whose business models are based on digital products but also any service provider and product manufacturer.

Today's rapid technological developments offer the opportunity to digitise all processes that can be digitised and replace human labour (Lee et al., 2018, p. 24). At the same time, digitalisation must eliminate unnecessary, unproductive work. However, it must not take away work, and it must not take away people's ability to work and earn a living.

Research questions

1. What are the trends in the financial growth of small and micro-capital companies in Latvia?
2. What factors influence the positive financial performance of small and micro-capital companies in the digital age?
3. How do the identified factors affect the positive financial performance of small and micro-capital companies in the digital age?
4. What is the correlation between the digital maturity of small and micro-capital companies and their balanced financial performance?

The goal of the Doctoral Thesis

Identify factors and assess their impact on the positive financial performance of small and micro-capital companies in the digital age.

To achieve the goal of the Doctoral Thesis, the following objectives have been established

1. To study the digital environment of Latvian capital companies.

2. To identify the factors that influence the positive financial performance of commercial activities in the digital age.
3. To assess the importance of the identified factors for Latvian small and micro-capital companies compared to the assessment of large global companies.
4. To evaluate the significance of the identified factors and their practical implications on business performance.
5. To develop a methodology for assessing the digital maturity of capital companies, including an interview framework and a method for evaluating the results.
6. To evaluate the correlation between the digital maturity of small and micro-capital companies and their overall financial performance.

The object of the Doctoral Thesis – Latvian small and micro-capital companies.

The subject of the Doctoral Thesis – assessing the factors influencing profit management in the digital age.

Research limitations

1. The following conditions were used to select the datasets for the data analysis:
   - data were taken for the period 2018–2022;
   - data includes capital companies incorporated before 2018 and active (not liquidated) in the period 2018–2022;
   - data includes small and micro-capital companies whose status is determined by the "Law on Annual Statements and Consolidated Annual Statements," using revenue as one of the criteria;
   - companies with a revenue of less than EUR 145,000 in 2021 were excluded.

2. Terminology used:

   - business, enterprise (including small and micro-enterprises), entrepreneur, business, company (including small and micro-capital companies), merchant (the rationale for use is reflected in Appendices 1 and 2;

   - business, business model, business ecosystem, disruptive innovation, and the rationale for use are reflected in Appendices 2 and 3.

Period of the research. The period of the research is from 2018 to 2024.

Research design

Various methods were used to answer the research questions and achieve the objective. The research has been carried out in several phases to achieve the study's objectives. The schematic design of the study is shown in Fig. 1.

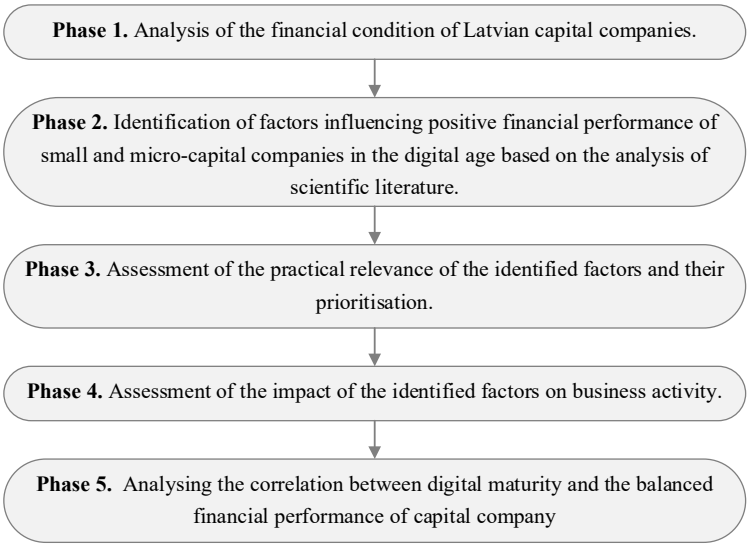


Fig. 1. Research design (created by the author).

Phase 1. Analysis of the financial condition of Latvian capital companies.

The research phase included the following steps:

- exploring the theoretical foundations of enterprise financial resilience;
- analysis of the business environment and public policy in a digitalised circumstance;
- assessing the balanced financial growth of Latvian capital companies based on an analysis of five years of financial statement data.

Phase 1 answered the first research question – What are the trends in the financial growth of small and micro-capital companies in Latvia?

Phase 2. Identification of factors influencing positive financial performance of small and micro-capital companies in the digital age based on the analysis of scientific literature.

The research phase included the following steps:

- a systematic review of scientific literature sources to select potential factors relevant to the topic under study;
- qualitative content analysis of the selected scientific literature to identify factors relevant to the topic under research, coding them according to standard features of the information items and grouping them into categories;
- validation and refinement of the factors identified through qualitative literature analysis using bibliometric analysis, using articles indexed in the Web of Science database.

Phase 3. Assessment of the practical relevance of the identified factors and their prioritisation.

The research phase included the following steps:

- survey of Latvian entrepreneurs on the practical importance of the identified factors and their impact on their profitability;
- analysis of integrated reports of global companies on the impact of identified factors on corporate sustainability, such as good practices;
- assessment of different and similar approaches to the importance of the identified factors in the valuation of large global companies compared to Latvian companies.

Phases 2 and 3 answered the second research question – What factors influence the positive financial performance of small and micro-capital companies in the digital age?

Phase 4. Assessment of the impact of the identified factors on business activity.

The research phase included the following steps:

- grouping of factors and analysis of their interaction according to the structure of the universal business model;
- assessment of the identified factors' impact in three independent business sectors.

Phase 4 answered the third research question – How do the identified factors affect the positive financial performance of small and micro-capital companies in the digital age?

Phase 5. Analysis of the correlation between digital maturity and capital company financial performance.

The research phase included the following steps:

- analysis of the theoretical basis for assessing the digital maturity of companies;
- creating a questionnaire to assess the digital maturity of businesses;
- analysis of the results of the structured self-assessment interview on digital maturity of entrepreneurs;

- analysing the correlation of the digital maturity of enterprises with their balanced financial performance.

Phase 5 answered the third research question – What is the correlation between the digital maturity of small and micro-capital companies and their balanced financial performance?

Research methods

1. Literature review:
   - systematic review of scientific literature;
   - qualitative literature analysis;
   - bibliometric analysis of literature sources.
2. Surveys:
   - a survey of entrepreneurs ($n = 77$) on the importance of positive financial performance factors and their impact on the profitability of business enterprises, carried out between January and November 2023;
   - self-assessment interview ($n = 70$) to assess digital maturity, conducted from June 2021 to early 2023.
3. Statistical data processing and analysis:
   - to prepare the database from the initial indicators, re-coding the survey responses using the Microsoft Office Excel application with the built-in VBA (Virtual Basic for applications) programming language;
   - quantitative data processing methods:
     - description statistics (frequency distributions and arithmetic averages);
     - comparative analysis of independent groups.

Main contributions and scientific novelty

1. A method for analysing the balanced financial growth of Latvian capital companies has been developed, allowing the financial development of small and micro-capital companies to be monitored.
2. The factors that influence the positive financial performance of a business in the digital age have been identified. The factors are grouped and interpreted using a business model.
3. A method for measuring the digital maturity of a corporation – a structured form of a self-assessment interview and a method for evaluating the results, has been developed.

4. Small and micro-capital companies' digital maturity is correlated with their balanced financial growth.

The practical value of the research for small and micro-capital company managers when developing balanced financial strategies

1. The analysis identifies the unbalanced financial growth of Latvian capital companies.
2. The Thesis identifies the 10 most important factors for Latvian small and micro-capital companies that influence the positive financial performance of their business.
3. The importance of the identified factors and their impact on specific business activities is assessed:
   - the impact of online sales channels on revenue growth;
   - the impact of disruptive innovation on the development of information goods and revenue capture;
   - improving service quality and reducing costs through the digitisation of the delivery and communication network.

Hypotheses

1. In the digital age, there are three categories of factors: 1) non-financial digital factors; 2) non-financial factors unrelated to digitalisation (non-financial non-digital factors); 3) financial factors that have a significant impact on the financial performance of small and micro-capital companies.
2. In the digital age, the positive financial performance of small and micro-capital companies can be achieved through the identified factors, the impact of which can be observed through improvements in business model elements.
3. There is a correlation between the digital maturity of small and micro-capital companies and their financial results.

Theses for defence

1. The analysis revealed an unbalanced development of small and micro-capital companies in Latvia due to the influence of external factors. To ensure the resilience of capital companies to the negative impact of these factors, new innovative solutions in managing commercial activities should be introduced, which are also in line with the guidelines of the Latvian National Development Plan and the European Programme for the Digitalisation of Society.

2. In the current business environment, the impact of non-financial digital, non-digital, and financial factors on the financial results of capital companies requires attention. Priority intrinsic factors – the quality of the business organisation, the digital literacy of company employees, the company's digital maturity, data-based management, and sales channels through the online environment – affect the performance of corporations regardless of their size. Automation through artificial intelligence, digital platforms, partnerships, and research is characteristic of large global companies and corporations. Customer feedback, product uniqueness, recognition of existing innovations and implementation in their business processes are important for Latvian small and micro-capital companies.
3. There is a consensus among researchers that business model innovation is a key condition for business performance. Digitalisation is a new source of business model innovation and therefore contributes to increased business competitiveness. Grouping the factors influencing a company's financial performance according to the elements of the business model dimensions makes it possible to understand the profit generation mechanism.
4. Despite the fact that balanced financial growth can only be achieved through the interaction of all elements of the business model dimensions, combining and adapting their different digitisation options, the digitisation of elements of the value proposition dimension has a greater economic impact at lower levels of digitisation, with an impact on revenue growth.

The research results have been presented in seven publications, six of them in well-established peer-reviewed scientific journals, and indexed in SCOPUS and WEB of Science, and two in refereed conference abstracts. The results of the author's work have been presented at eight conferences, and the author has participated in two scientific and research projects and one business project.

Scientific publications

1. Kasperoviča, L., Lāce, N. (2019). Business Model Transformation and Business Viability. Case of Yellow Pages. *Proceedings of the 23rd World Multi-Conference on Systemics, Cybernetics and Informatics (WMSCI 2019):* Vol.3, United States of America, Orlando, 6–9 July 2019. Winter Garden: International Institute of Informatics and Systemics (IIIS), 2019, pp. 19–24. ISBN 978-1-950492-10-7 (Scopus).

2. Bistrova, J., Lāce, N., Kasperoviča, L. (2021). Uzņēmuma krīzes noturība un konkurētspēja. *No: Latvijas Tautsaimniecības pandēmijas ēnā un pēckrīzes izrāviena iespējas. I. Šteinbuka red.* Rīga: LU Akadēmiskais apgāds, 2021. 104.–127. lpp. ISBN 978-9934-18-687-5. e-ISBN 978-9934-18-690-5. Available: DOI: 10.22364/ltpepii.
3. Bistrova, J., Lāce, N., Kasperoviča, L. (2021). Enterprise Crisis-Resilience and Competitiveness. *Sustainability, 2021,* Vol. 13, No. 4, Article number 2057. e-ISSN 2071-1050. Available: doi:10.3390/su13042057 (WEB of Science).
4. Kasperoviča, L., Lāce, N. (2021) Factors Influencing Companies' Positive Financial Performance in Digital Age: A Meta-Analysis. *Entrepreneurship and Sustainability Issues*, 2021, Vol. 8, No. 4, pp. 291–311. e-ISSN 2345-0282. Available: doi:10.9770/jesi.2021.8.4(17) (WEB of Science).
5. Kasperoviča, L., Lāce, N., Ciemleja, G.,Tesarova, M. (2022). Digital maturity and value capture of small and medium-sized enterprises. In: *13th International Multi-Conference on Complexity, Informatics and Cybernetics (IMCIC 2022): Proceedings*, *United States of America, Orlando,* 8–11 March 2022. Virtual, Online ASV: International Institute of Informatics and Cybernetics, IIIC, 2022, pp. 159–164. Available: doi:10.54808/IMCIC2022.02.159 (Scopus).
6. Bistrova, J., Lāce, N., Kasperoviča, L. (2024). Start-up Support Efficiency Assessment. In: 15th International Multi-Conference on Complexity, Informatics and Cybernetics (IMCIC 2024): *Proceedings, United States of America,* Orlando, Florida, 26–29 March 2024. Winter Garden: International Institute of Informatics and Systemics (IIIS), 2024, pp. 185–191. ISBN 978-1-950492-78-7. ISSN 2771-5914. Available: doi:10.54808/IMCIC2024.01.185 (Scopus).
7. Kasperoviča, L., Lāce, N., Ciemleja, G. (2024). Factors Influencing Positive Financial Performance: The Assessment Given by Latvian Companies. In: *15th International Multi-Conference on Complexity, Informatics and Cybernetics (IMCIC 2024): Proceedings*, United States of America, Orlando, 26–29 March 2024. Winter Garden: International Institute of Informatics and Systemics (IIIS), 2024, pp. 192–199. ISBN 978-1-950492-78-7. ISSN 2771-5914. Available from: doi:10.54808/IMCIC2024.01.192 (Scopus).

Refereed conference abstracts

1. Kasperoviča, L., Lāce, N. (2019). Uzņēmējdarbības pozitīvo finanšu rezultātu (peļņu) ietekmējošie faktori digitalizācijas laikmetā. In: *Scientific Conference on Economics and*

Entrepreneurship SCEE '2019: Organized within the 60th International Scientific Conference of Riga Technical University: Book of Abstracts, Latvia, Riga, 11–12 October 2019. Riga: RTU Press, 2019, pp. 39.–39. ISBN 978-9934-22-368-6. ISSN 2256-0866.

2. Lāce, N., Kasperoviča, L. (2021). Development of a Methodology for Determining the Digital Maturity of a Company. In: *18th International Scientific Conference "Perspectives of Business and Entrepreneurship Development: Digital Transformation for Business Model Innovation: Economic, Management, Finance and System Engineering from the Academic and Practitioners' Views",* Czech Republic, Brno, 16–17 September 2021. Brno: Brno University of Technology, 2021, pp. 52–52. ISBN 978-80-214-6004-1.

Participation in scientific and research projects

1. VPP reCOVery-LV (Project No. VPP-COVID-2020/1-0010), under "Assessing the crisis resilience of Latvian companies, and ways to improve them.".

   Key responsibilities:

   - establishing criteria for selecting financial and other business data for companies and selecting data from the Firmas.lv portal for the period 2015–2019; 24,750 companies are included in the data selection;
   - participation in the development, mailing, data processing and conclusion formulation of the questionnaire "Study of the impact of the Covid-19 pandemic on Latvian companies and the possibilities of preventing its negative consequences".

2. Evaluation of the intermediate results of the measure "Support to Social Entrepreneurship" and development of proposals to improve the legal framework and support", identification number: LRLM2020/32-4-09/3ESF, commissioned by the Ministry of Welfare of the Republic of Latvia, executed by Oxford Research Baltics Ltd, Riga, 2021 https://www.lm.gov.lv/lv/media/14466/download.

   Key responsibilities: invited expert on Financial Sustainability and Growth Analysis of Social Entrepreneurship

   - in the section on "Characteristics of Latvian social enterprises" (selection methodologies, characteristics of enterprises, economic performance, main conclusions and proposals);
   - in the section "Assessing the social impact of Latvian social enterprises" (contributing to developing impact measurement criteria, analysing social enterprise reports and assessing impact).

Other projects

Management of the project implementation November 2021 – December 2023, "Digitalisation of home care process management and business operational processes", European Social Fund (ESF) project identification No. 9.1.1.3/15/1/001. The project has been developed, and funding of EUR 202,164 was obtained in November 2021.

The results of the research have been presented at international scientific conferences.

1. RTU 59th International Scientific Conference "Scientific Conference on Economics and Entrepreneurship" (SCEE'2018) held in Riga, Latvia, October 18, 2018. Presentation "CLASSIFICATION OF ELEMENTS OF SME'S BUSINESS MODELS AND POSSIBILITIES OF THEIR DIGITALIZATION. THEORETICAL ANALYSIS".
2. RTU 60th International Scientific Conference "Scientific Conference on Economics and Entrepreneurship" (SCEE'2019) held in Riga, Latvia, October 11–12, 2019. Article in conference proceedings "Uzņēmējdarbības pozitīvo rezultātu (peļņu) ietekmējošie faktori digitalizācijas laikmetā" and presentation.
3. RTU 61st International Scientific Conference "Scientific Conference on Economics and Entrepreneurship" (SCEE'2020) held in Riga, Latvia, October 16, 2020.
   Presentations:
   - J. Bistrova, N. Lāce, L. Kasperoviča, "Analysis of the companies' financial and economic robustness".
   - J. Bistrova, N. Lāce, K. Oganisjana, K. Kozlovskis, L. Kasperoviča, G. Cemleja, T. Laizāns, I. Zumente, "Research on the impact of problems caused by COVID-19 on the Latvian enterprises and opportunities for overcoming the negative consequences".
4. SOI & Riga Technical University 2021 Conference, July 12–15, 2021, Special Session 14. Innovation Diversity for Emerging Economies. Presentation: Ludmila Kasperovica, Natalja Lāce "Digital maturity and value capture of Small and medium-sized enterprises".
5. 18th International Scientific Conference "Perspectives of Business and Entrepreneurship Development: Digital Transformation for Business Model Innovation: Economic, Management, Finance and System Engineering from the Academic and Practitioners' Views", Brno University of Technology, Czech Republic, Brno, September 16–17, 2021. Presentation:

Natalja Lāce, Ludmila Kasperoviča “Development of a Methodology for Determining the Digital Maturity of a Company”.

6. RTU 64th International Scientific Conference “Scientific Conference on Economics and Entrepreneurship” (SCEE’2023), Riga, Latvia, October 12, 2023. Presentation: “Faktori, kas ietekmē uzņēmuma pozitīvo finanšu rezultātu (peļņu) digitālā laikmetā”.
7. 15th International Multi-Conference on Complexity, Informatics and Cybernetics, (IMCIC2024), International Institute of Informatics and Systememics, March 26–29, 2024. Presentation: “Factors Influencing Positive Financial Performance: The Assessment Given by Latvian Companies”.
8. SOI & Riga Technical University 2024 Conference, 9–12.07.2024, Special Session Business Model Innovation for Responsible Consumption and Production. Presentation: Ludmila Kasperovica, Natalja Lāce, Guna Ciemleja “Company’s digital maturity and its sustainability: the development of methodology”.

The Thesis consists of four chapters.

In Chapter 1**,** the author researches the theoretical underpinnings of corporate financial resilience and describes the general global business environment in the digital age. Then, the author describes commercial activity in Latvia by analysing financial data of statistical capital companies for five years, from 2018 to 2022, and their dynamics in the corresponding period under the influence of external factors.

Chapter 2, the author initially identifies factors influencing positive financial performance of businesses in the digital age, based on a systematic literature review and qualitative content analysis of selected sources. In order to determine the relevance of the selected factors in the context of the topic under study, the selected factors have been grouped into categories. Using statistical meta-analysis techniques, the proportional weight of each category in the context of the research question was determined. Using articles indexed in the Web of Science database and bibliometric analysis, the factors identified in the literature review were further confirmed and extended. To assess the practical impact of the identified factors on the commercial activity of small and micro-capital companies, the author conducted a survey of Latvian entrepreneurs. In addition, a sample was selected to check whether the world's large companies mention these factors in their strategies in

their non-financial reports and whether the priority given to the factors differs from the findings of the survey of Latvian entrepreneurs.

In Chapter 3, the factors are grouped using the structure of the universal business model – value proposition, value creation, and value capture – to assess the practical impact of the selected factors on the profit generation of the company. The chapter assesses the importance of the identified factors, interpreting them using the structure of the universal business model, and determines their impact on different business activities: 1) electronic commerce (e-commerce) as a revenue channel; 2) the impact of disruptive innovation on information product development and revenue retention; 3) the impact of digitisation of delivery and communication networks on service quality improvement and cost reduction.

In Chapter 4, the author provides a theoretical background for assessing the digital maturity of capital companies. To analyse the correlation between the digital maturity of Latvian capital companies and their financial result, a questionnaire was developed and used for self-assessment interviews to determine companies' digital maturity levels. The questionnaire is structured around the dimensions of the universal business model. The qualitative content of the questionnaire structure is based on seven different methodologies for measuring the digital maturity of companies, which have been explored in the literature review. Using the questionnaire, structured self-assessment interviews were held with Latvian entrepreneurs between June 2021 and early 2023 to determine the digital maturity of the companies they operate. The impact of the digital maturity of the companies was linked to a balanced financial growth analysis carried out using the respondents' financial statement data for 2021–2022. The situation analysis searched for correlations between the respondents' survey data and their financial indicators.

The main scientific developments

1. Latvian commercial activity in the digital age

The chapter contains 17 pages, four tables, seven figures, and four formulas.

Considering that Latvia is recognised as a country whose business structure consists mainly of small and micro-capital companies, to assess their financial health and balanced financial growth, based on the data provided in the 2021 annual reports of companies (Firmas.lv, 2024), a dataset was created that includes information on 19,721 capital companies and accounts for 25.34 % of all capital companies. The selected dataset contains financial information extracted and aggregated from annual reports from 2018 to 2022.

The analysis of five years of financial statement data for the selected companies shows that several external factors operating in the relevant selected period had a significant impact on the financial results of entrepreneurship.

Changes to the Enterprise Income Tax Law (Enterprise Income Tax Law, 2017) in 2018 are noted as positive. As of 2018, the taxable base for enterprise income tax is distributed profits, while profits reinvested for business development are not taxable, but the above data shows that around 20 % of small and micro-capital companies will not be able to benefit from this provision due to losses.

In 2020, the COVID-19 pandemic sharply dropped companies' key financial indicators – revenue, profits, and profitability. Almost all sectors were affected, except medicine, pharmaceuticals, and agriculture, with the most significant drop in revenues in the tourism, hospitality, and entertainment industries. The COVID-19 pandemic in 2022 was followed by a sharp rise in energy prices due to the war in Ukraine and the inevitable high inflation rate (Inflation Calculator, 2024). The apparent increase in revenue in 2022 is mainly due to the sharp increase in general prices, while expensive inputs did not contribute to the increase in profitability of the business. Even though companies are generally profitable, most have unbalanced financial growth, meaning that revenue growth is faster than profit growth.

An analysis of the financial statement data shows a 6.64 % drop in revenue in 2020 compared to the previous year, 2019, while in 2021, revenue increased by 11.49 % compared to the previous year, 2020, reaching EUR 19,727,848 thousand. In 2019, the increase was 18.61 % compared to the previous year, 2021, reaching EUR 23,398,722 thousand, and in 2022, 18.61 %

compared to the previous year, 2021, reaching EUR 23,398,722 thousand. The sharp increase in revenue in 2022 led to a decrease in the business's profitability from 9.86 % in 2021 to 9.54 % in 2022 (Fig. 1.1.).

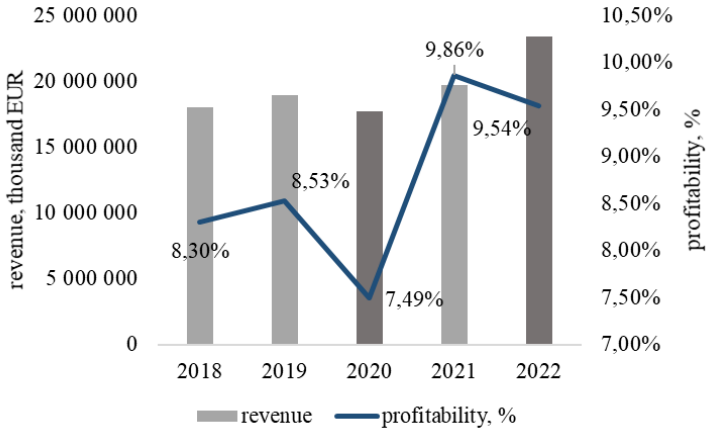


Fig. 1.1. Enterprises' revenue and profitability from 2018 to 2022 (created by the author using the Firmas.lv database).

The Latvian business environment is characterised by a lack of capacity to invest in research and development among Latvian enterprises, predominantly small and micro-capital companies. The percentage of innovative enterprises in Latvia is one of the lowest in the EU. The development of digital enterprises in Latvia is below the EU average.

The analysis shows that today, there are a series of risks, acting sequentially or concurrently, that affect the sustainability of a business. However, there is no unified approach to overcoming the negative impact of these risks, regardless of the sector or the lifetime of the business.

Supporting the resource-poor segment to organise efficient business management using modern high-tech tools, the study proposes solutions and ways to promote efficient business management and achieve positive financial performance in the digital age.

2. Identification of the factors influencing the positive financial performance of capital companies in the digital age

The chapter contains 37 pages, six tables, and 18 figures.

In order to identify the factors influencing the positive financial performance of small and micro-capital companies in the digital age, a sequential study was conducted using the methods shown in Fig. 2.1.

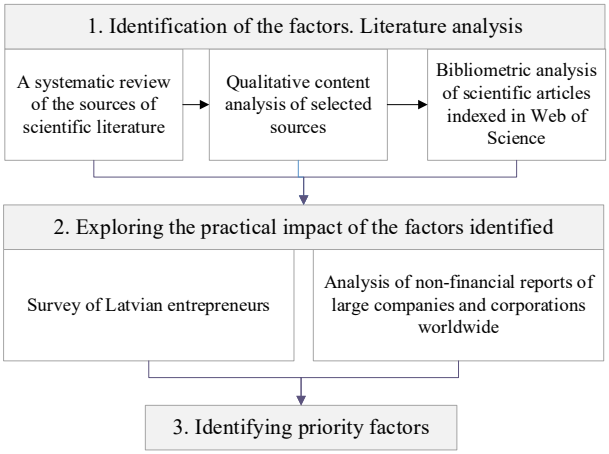


Fig. 2.1. Steps and methods used in factor analysis (created by the author).

The first step in identifying and conceptualising these factors is a literature review. The initial phase of the study involved a systematic literature review and a qualitative content analysis of the selected sources, and the factors identified were further validated and expanded using articles indexed in the Web of Science database using bibliometric analysis.

Thirty-three factors that the authors consider important in developing a sustainable and profitable business are identified in the literature review. Based on the content analysis of the sources, the most frequently mentioned factors influencing positive business performance are summarised in Table 2.1, which shows the frequency with which these factors are mentioned in the sources studied. The selection of factors has been grouped based on the area in which they have an impact.

Table 2.1

Summary of factors influencing a positive business outcome (created by the author)

Categories	Groups	Factors	Number of factors mentioned	Total number of factors mentioned in sources, times
1	2	3	4	5
Non-financial digital	Automation	Automation and intelligent processes		3
	Digital network	Digital network		7
		Business ecosystem		8
		Partnership and alliances		13
		Own an online digital platform		4
		Sales channels through the online environment		4
		Third-party online digital platform		5
	Digital development	Business model digital transformation		6
		Digital maturity		4
		Digital literacy of company employees		6
	Digital data	Data-based management		7
Non-financial digital category, total			**11**	**67**
Non-financial non-digital	Quality of the business organisation	Outsourcing		5
		Dynamic technological progress		8
		Recognition of existing innovations		7
		Innovation at the multi-dimensional level		1
		The time effect of innovation implementation		6
		Customer feedback		1
		Quality		2
		Research and development		9
		Unique selling points		2
		Social aspect		1
	Disruptive innovation	Competitive threats beyond the company's industry boundaries		3
		A more sustainable, innovative and expensive product		2
		The interactive effect of physical products and service offerings		2
		New-market disruptive products		1
		Servitisation strategy		9
		Discount prices at the low end of the market		3
Non-financial non-digital category, total			**16**	**62**

Table 2.1 continued

1	2	3	4	5
Financial	Revenue items	New pricing concepts		3
		Revenue growth as a determining factor		5
	Cost items	Transformation of fixed costs into variable costs by digitisation		3
		Cost savings through digitisation		10
	Financial result as a whole	Limited time to make a profit		4
		Reducing costs by increasing or maintaining revenue		5
Financial category, total			**6**	**30**
Total			**33**	**159**

The factors that influence digital innovation are grouped under the non-financial digital category, which includes the following groups: automation, digital data, digital communication networks (adapted from Schallmo et al. (2017, p. 17)), and digital development. The other factors in the non-financial category that are not related to digitalisation (non-financial non-digital factors) are grouped into two groups, one according to the characteristics of the quality of business organisation, and the other resulting from disruptive innovation. The financial category, on the other hand, includes factors through which profit strategies are implemented by improving the revenue/cost structure.

Non-financial digital category

Digitalisation is a new source of innovation in business models, contributing to greater business competitiveness and increased profits for individual companies (Dehning et al., 2003, p. 20).

Within the non-financial digital category, the most frequently mentioned group of factors is the digital communication network**.** The digital communication network creates new communications for companies, both with customers, expanding the possibilities to present their products, as well as expanding and facilitating product ordering, and with suppliers and other partners (Raymond et al., 2016, p. 14; Mikusz, 2017, p. 10; Köhler, 2008, p. 15), forming a business ecosystem. The business ecosystem consists of individuals, organisations, public authorities and the rules that enable a company to interact with its customers, competitors, the media and others (Moore, 1996, p. 297; 1996, p. 29; Lusch & Nambisan, 2015, p. 12). The ecosystem is not based

on a core company; different companies can operate in the same ecosystem, adapting their different business models to develop the ecosystem (Zott & Amit, 2013, p. 9). One company can be part of several ecosystems, including its partners, suppliers, and customers (Paulus-Rohmer et al., 2016, p. 6). However, the exchange of services in an ecosystem is not effective without a service platform that helps to collect and distribute resources as a result of their efficient interaction (Lusch & Nambisan, 2015, p. 12). Platforms bring together several consumer groups and create value only on the basis of the mutual interests of the consumer groups. With the two-sided network effect, the value of the platform increases if the platform meets demand from both sides and the number of users on the network increases (Eisenmann et al., 2006, p. 11). Contemporary technologies – cloud computing, broadband, sensor technology – help businesses to build their own platforms with integrated e-commerce capabilities, as well as to use third-party (Paulus-Rohmer et al., 2016, p. 6). For example, the Alibaba platform helps small businesses adapt to the fast-changing rules of the digital world (Li et al., 2018, p. 29), allowing them to go beyond the local market to the international market. By synchronising data across platforms, ecosystem actors build partnerships and alliances (Dehning et al., 2003, p. 20; Seelos, Mair, 2007, p. 15; Nosratabadi et al., 2020, p. 33), increasing sales (Dehning et al., 2003, p. 20), achieving social, environmental and economic benefits at the same time (Nosratabadi et al., 2020, p. 33). For example, publishers use traffic from other publishers' websites to increase their own popularity (Viljakainen et al., 2013, p. 24). Mobile or wired networking of the entire value chain using high-speed broadband communication enables supply chain synchronisation, reducing production time and innovation cycles (Schallmo et al., 2017, p. 17).

The main objectives of digital transformation are to capture new data and to use this data to update old processes (Schallmo et al., 2017, p. 17). The digital data group of factors enables data-driven governance. The collection, processing, and analysis of digitised data facilitate and improve management forecasts and decisions, creating a profitable business (Schallmo et al., 2017, p. 17). Digital transformation is changing the business organisation from defining processes to a data flow management concept (Bendor-Samuel, 2017, p. 3; Schallmo et al., 2017, p. 17). New state-of-the-art analytical tools integrated into the business model provide a wide range of data analysis capabilities (Köhler, 2008, p. 15), providing information on products, customers, and key business units (Christensen, 2003, p. 311). For example, data analysis in pricing policy allows one to find an appropriate markup with a small price increase, which, with a significant amount of

turnover, significantly increases profits without losing market size (Mazouni, 2013, p. 2). Reports generated using data from third-party platforms provide information on customer behaviour and product demand (Li et al., 2018, p. 29). All this new data generates new knowledge and offers the opportunity to make businesses more efficient and replace labour resources through automation, significantly reducing costs (Dehning et al., 2003, p. 20; Schallmo et al., 2017, p. 17).

The digital development group includes the business model, digital transformation, and use of new tools and technologies. These tools require digital literacy of company employees – knowledge of data collection, processing, calculation, and evaluation (Schallmo et al., 2017, p. 17; Weill et al., 2002, p. 9; Remane, 2017, p. 11). An effective digital culture drives digital development at different stages of an enterprise's digital maturity (Kane et al., 2016, p. 28).

The automation group of factors includes using different technologies to create automated processes. Robotic process automation (RPA) (O'Leary, 2023,10) is a combination of classical and artificial intelligence technologies that enable autonomous work and self-organising systems. This reduces errors, increases speed, and reduces operating costs (Schallmo et al., 2017, p. 17).

Non-financial non-digital category

The objective of the commercial activity is to achieve a return on investors' capital investments in the short, medium, and long term through the efficient use of resources. Managers are also tasked with generating value from non-financial capital such as employees, trademarks, and natural resources (Association of Chartered Certified Accountants (ACCA), Netherlands Institute of Chartered Accountants (NBA), 2013, 29), as well as operational measures such as quality, meeting project deadlines, on-time delivery (Fullerton & Wempe, 2009, p. 27). The digital environment and the non-financial digital factors described above also directly impact the qualitative organisation and management of the business.

The non-financial, non-digital category factors were selected in the quality of the business organisation group and the disruptive innovation group.

Quality of the business organisation

Doing research has been named as one of the important factors driving business support. Businesses invest in research both directly, through knowledge creation, and by adapting innovations already on the market to their industry (Raymond et al., 2016, p. 14; Cohen & Levinthal, 1990, p. 25; Remane, 2017, p. 11; Mikusz, 2017, p. 10; Malmmose & Lueg, 2014, p. 14). The dynamic impact of technological advances requires regular refinement of the company's

business model to maintain a positive financial result (Linder & Cantrell, 2001, p. 15). By modifying their business model, companies adapt solutions from other companies' business models, combining them (Remane, 2017, p. 11; Linder & Cantrell, 2001, p. 15) and making innovative changes at the level of different dimensions (Köhler, 2008, p. 15), creating a unique product (Paulus-Rohmer et al., 2016, p. 6). Business support functions, such as logistics, accounting, and IT, should be outsourced, as it is usually difficult to plan the number of staff with the right skills for support functions (Köhler, 2008, p. 15; Ekundayo, 2019, p. 8). Digital platforms enable companies' customers and partners to interact with each other, thus enhancing product uniqueness and existing product quality (Linder & Cantrell, 2001, p. 15). Customer feedback also supports product uniqueness and quality maintenance (Seelos & Mair, 2007, p. 15). The development of an innovative business model should be accompanied by tasks and decision-making that are linked to each other in a logical and temporal context. Time, finance and quality are the key success factors that influence the viability of each project (Christensen, 2003, p. 311).

Disruptive innovation. Innovative development can work in two ways: as innovation for the company's sustainability, improving existing products that can be sold at a higher price and attract more customers, or as disruptive innovation (Christensen, 2003, p. 311). Disruptive innovation leads to alternative products that are much cheaper, easier to use, and partly or fully replace the existing products. Disruptive innovations do not try to create better products; they introduce new products that are not currently on the market (Linder & Cantrell, 2001, p. 15; Christensen, 2003, p. 311). At the same time, for one business, it may be a disruptive innovation, while for another, it may contribute to sustainable development (Christensen, 2003, p. 311). Strategic changes in the industry today often come from a completely different sector and lead to changes in cooperation policies and competition rules (Kita & Šimberova, 2018, p. 15). Digital technologies have profoundly impacted the economy, changing how businesses interact with each other, customers, and other business partners. They created an innovative environment where companies operated at a higher level – faster, cheaper, smarter – and had many new business opportunities (Lumpkin & Dess, 2004, p. 13).

The innovative approach to market expansion no longer supports traditional market segmentation methods, where product and customer are the key attributes. However, it focuses on the product in the circumstances in which customers are located rather than on the customers themselves (Hackos, 2003, p. 3) and the benefit as a result (Mikusz, 2017, p. 10; Hackos, 2003,

p. 3). This approach proposes a new business model construct based on a service-dominant approach (Raymond et al., 2016, p. 14; Mikusz, 2017, p. 10; Hackos, 2003, p. 3; Ekundayo, 2019, p. 8; Viljakainen et al., 2014, p. 24; Kotarba, 2018, p. 20; Lusch & Nambisan, 2015, p. 12), in which customers are analysed as value co-creators rather than as sales targets (Mikusz, 2017,10).

The ability of an organisation to convert customer expectations contained in data into the development of a product or service for which the customer will pay if his expectations are met (Raymond et al., 2016, p. 14, Mikusz, 2017, p.10), is supported by a service-dominant logic (Mikusz, 2017, p. 10) and a servitisation strategy (Moser, 2018, p. 117; Kosaka, 2012, p. 21). Product servitisation refers to two different types of resources – operands and operants (Rafati & Poels, 2014, p. 9; Lusch & Nambisan, 2015, p. 12; Mikusz, 2017, p. 10). Operational resources are usually tangible resources that require some action to be valuable. Operant resources are usually intangible (Mikusz, 2017, p. 10) and dynamic resources that can act on operands and other operant resources, such as knowledge. According to the evolution of servitisation products, value can only be derived from operational resources, which can be transmitted directly or through operand resources. This means the physical good remains only as a service distribution mechanism (Mikusz, 2017, p. 10). The implementation of digitalisation and a service-based approach also includes possible integration with partners (Schallmo et al., 2017, p. 17), value co-creation, and resource integration. The value proposition mediates the continuous interaction between value creation and resource integration (Fullerton & Wempe, 2009, p. 27).

Financial category

Revenue items. Revenue growth remains the key to sustaining profits (Dehning et al., 2003, p. 20; Seelos & Mair, 2007, p. 15). When planning their business strategies, the authors recommend developing multiple revenue streams simultaneously, targeting both the rich and the low end of the consumer spectrum (Seelos & Mair, 2007, p. 15; Christensen, 2003, p. 311). A common revenue-raising technique is to generate revenue from selling large volumes of low-priced units (Viljakainen et al., 2013, p. 24). This technique is widespread in information product sales strategies. Pricing policies for information products also provide for a wider price range by adding a variable component to the fixed part of the price, depending on the volume of use of the service, without limiting the time of use (subscription fee) or a dynamic pricing policy by adding additional values to the essential product (Viswanathan & Anandalingam, 2005, p. 18; Kotarba, 2018, p. 20).

The above pricing policy can also be applied to other product offerings, such as tourism, insurance, and other sectors.

Cost items. With the introduction of digitalisation, the authors identify cost reduction as one of the fundamental modern trends, primarily the reduction of fixed costs (Dehning et al., 2003, p. 20; Joseph, 2018, p. 12; Ainin, 2015, p. 18). In order to achieve an efficient cost structure, it is necessary to replace operational fixed costs with variable costs (Paulus-Rohmer et al., 2016, p. 6; Schallmo et al., 2017, p. 17). Outsourcing, virtual workers, and robotisation of processes are ways to adapt costs to changing workloads (Köhler, 2008, p. 15; Hackos, 2003, p. 3).

Financial result as a whole

Limited time to make a profit. Dynamic technological progress is forcing companies to innovate their business model through research. Innovation leads to higher profits as long as the innovation does not become a regular practice (Dehning et al., 2003, p. 20). Disruptive innovation is influenced by the digital transformation of the business model, and it should be noted that the profit generation mechanism also worked according to a new formula (Christensen, 2003, p. 311). Strategies that give a positive financial result quickly should be chosen wherever possible, whereas investing for long-term returns nowadays means choosing the wrong strategy (Christensen, 2003, p. 311).

Reducing costs by increasing or maintaining revenue. Profit maximisation is often perceived in practice as cost-cutting. However, profit maximisation is the ability of a company to maximise profit by maximising revenue through more efficient use of resources (Ekundayo, 2019, p. 8). It is advisable to achieve an optimal expenditure/revenue balance by searching for efficiency gains (achieving a better result) rather than simply looking for ways to reduce expenses in isolation (Viljakainen et al., 2013, p. 24).

In order to assess the practical impact of the identified factors, the **second step** involved a survey of Latvian businesses on the importance of the factors in their business experience and, in addition, a sample of large global companies and corporations based on their non-financial reports to see whether they take the identified factors into account in their strategies. Data was extracted from the Integrated Reporting Examples Database (IFRS Society, 2024), a public reporting platform for the analysis of large world companies.

77 representatives of limited liability companies (LLC) took part in the survey. The selection of respondents and the analysis of their responses were carried out using iterative

sampling (Busetto et al., 2020, p. 10; Dunwoodie et al, 2022, p. 26), whereby a preliminary data analysis was carried out at intermediate stages of the data collection process, the data collection process continued until it was determined that further data collection was not appropriate. A data saturation point was reached where no further insights could be gained from the data, and the sample was able to answer the research question, so that further data collection no longer provided new insights (Busetto et al., 2020, p. 10; Dunwoodie et al., 2022, p. 26). The survey of Latvian businesses confirmed the practical relevance of the identified factors in Latvian commercial activity. However, four respondents from different sectors commented that digitalisation and the factors mentioned in the questionnaire had no practical impact on the financial result of the business, but that the business result was determined by the professionals working in their field. Respondents are more concerned about the fact that large corporations are gradually shutting small businesses and artisans out of the market. Respondents are also concerned about the risk of digital fraudsters.

The financial category was ranked as the top priority by respondents. The author attributes the leadership of the financial category to the survey's focus on profit, which is more clearly indicated by the financial category factors.

In the TOP 10 ranking of the non-financial category, 70 companies (90 % of all respondents) indicated that product and service quality is the most important factor in achieving a positive financial result from their business activities. The factor of recognising existing innovations and integrating them positively into their business was noted by 53 respondents. The comments point out that it is important to have as broad an understanding as possible of the market and general trends in society, politics, big business, and the global economy. Before implementing any innovation or digital solution, time must be spent researching and configuring the right solution for the company. 44 questionnaires highlighted unique selling points as important and created a personalised offer for each customer. The respondents attribute a significant impact to the digital maturity of the company (the factor mentioned in 40 questionnaires). In contrast, respondents commented that sometimes, a disproportionately large investment in the company's revenues is required to fully implement the digitalisation of the business model. In addition, not only that the company's digital maturity is important, but also the ability of customers and product consumers to use digital tools, search and order products on e-commerce sites, and follow available data analytics. While noting the significant impact of the digital literacy of employees factor (the faactor

mentioned in 39 questionnaires), respondents also pointed to a lack of talent in the labour market. In contrast, existing employees lack motivation and fear using new digital tools. Noting the significant impact of the customer feedback factor (the factor mentioned in 39 questionnaires), respondents commented that in today's digital world, a brand's success depends on customer trust and loyalty; one negative review or statement on digital channels can damage a company's reputation and reduce sales in several ways. To compensate for one negative review, it is necessary to get several positive reviews. Even though the questions about the use of digital communication network (external and internal communication tools) and the use of third-party digital platforms were generally not prioritised by respondents, several comments noted that up-to-date information about companies and the products they offer should certainly be continuously available online, as well as on social networks. Keeping up-to-date not only helps to market the product but also to raise the company's profile in the labour market.

Several respondents' comments are consistent in their view of the impact of today's dynamic environment and, therefore, of the time factor as a determinant in adopting digital solutions for products and processes in service and service delivery, cash collection, and speed of payment.

In addition, a partially different approach to the importance of the identified factors in assessing large global companies compared to the assessment of Latvian companies is found. The information revealed in the integrated reports of a selection of 94 large world companies shows that digitisation and the digital transformation of the business model are the way of the future for business. Sustainable business development strongly focuses on process automation and the use of artificial intelligence, the development of innovative products, the conduct and use of research for business development, digital platforms, partnerships, and alliances created and used by actors in business ecosystems.

Both large global companies and Latvian entrepreneurs note that the quality of products and services is paramount in building a sustainable and profitable business. Digital literacy of employees, use of digital sales channels for products/services, and data-based management are noted by both groups as important (Fig. 2.2).

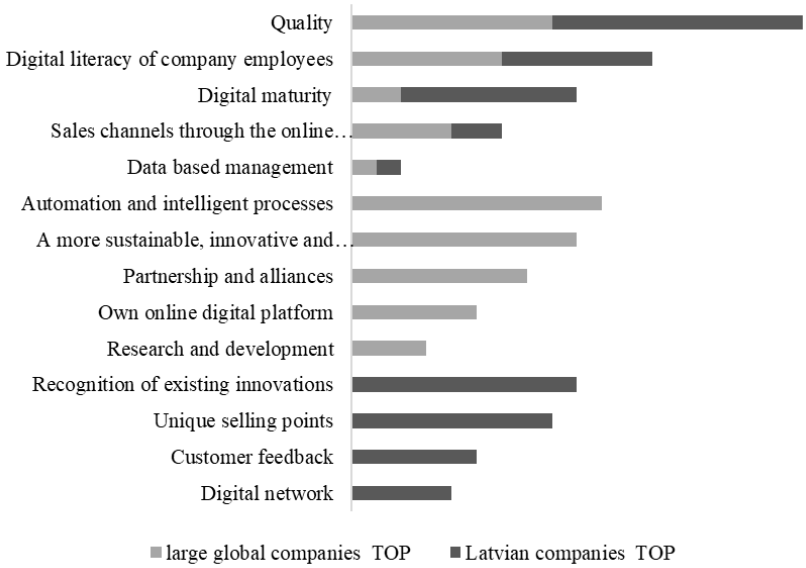


Fig. 2.2. Summary of priority factors in the assessment of the world's large companies and Latvian companies (created by the author).

In order to analyse the practical performance of the selected factors, the identified factors were grouped and interpreted based on the universal business model framework, which was used to explore the importance of the identified factors and their impact on three different independent business sectors.

3. Assessment of the impact of the identified factors on commercial activity

The chapter contains 48 pages, seven tables, 28 figures, and one formula.

Grouping of the identified factors and their interaction according to the structure of the universal business model

In recent years, the concept of business model (BM) has become popular and has been the subject of several academic and applied studies (Chesbrough, 2010, p. 10; Burkhart et al., 2011, p. 19; Batocchio et al., 2016, p. 24; Clauss, 2017, p. 19; Christensen, 2003, p. 311; Zott et al., 2011, p. 24; Osterwalder & Pigneur, 2002, p. 5).

Clauss (2017, p. 19), summarising definitions provided by scholars, considers business models as a form, framework, or template for companies to manage and develop their business holistically and at a system level.

A key feature of the digital age is the unpredictable and disruptive combination of new technologies and markets (Reis et al., 2018, p. 11), and without dynamically adapted BM (Lee et al., 2018, p. 24), business growth is not possible (Reis et al., 2018, p. 11).

Many scholars consider that BM integrates three key aspects of business: **value proposition (VP), value creation (VC), and value capture and retention (VCp)** (Clauss, 2017, p. 19). Value retention includes financial (Clauss, 2017, p. 19) and, in the author's view, non-financial aspects. BM is a conceptual tool that encompasses a set of elements and their interactions and reflects the business logic of each specific company (Osterwalder & Pigneur, 2002, p. 5) (Fig. 3.1).

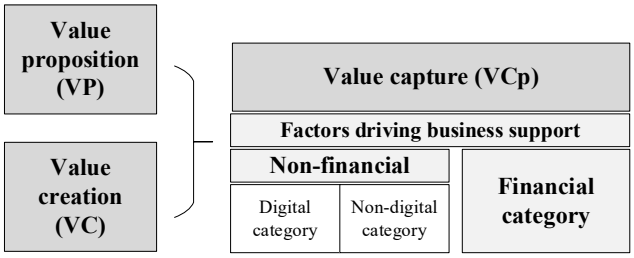


Fig. 3.1. Grouping of factors driving business support, based on the BM structure (created by the author).

The value proposition dimension includes a set of solutions for the company's customers (Clauss, 2017, p. 19). It defines who the company's customers are, what product is offered to them, who the main consumers of the product are, pricing policy and communication, including distribution channels and marketing activities. The successful interaction of all value proposition elements shapes the company's revenue stream (Clauss, 2017, p. 19). The value creation dimension describes how and by what means companies generate value and create value chains (Clauss, 2017, p. 19), with which resources, competencies, and processes. The choice of value-creation elements in each specific BM impacts the level and structure of costs (Clauss, 2017, p. 19). The financial dimension of the value capture dimension determines how the value proposition will be converted into revenue, the cost structure, and the profit generation mechanism, while the non-financial dimension offers a set of factors driving business support that contribute to a positive financial result. Creating a sustainable and profitable BM in the digital age is only possible through integrating all BM dimensions and combining and adapting different profit strategies (Köhler, 2008, p. 15). In order to assess the practical impact of the 33 factors identified in the previous section (see Table 2.1) on business revenues, costs and the overall maintenance of a positive financial result, the factors were grouped and interpreted using the BM structure (Fig. 3.2).

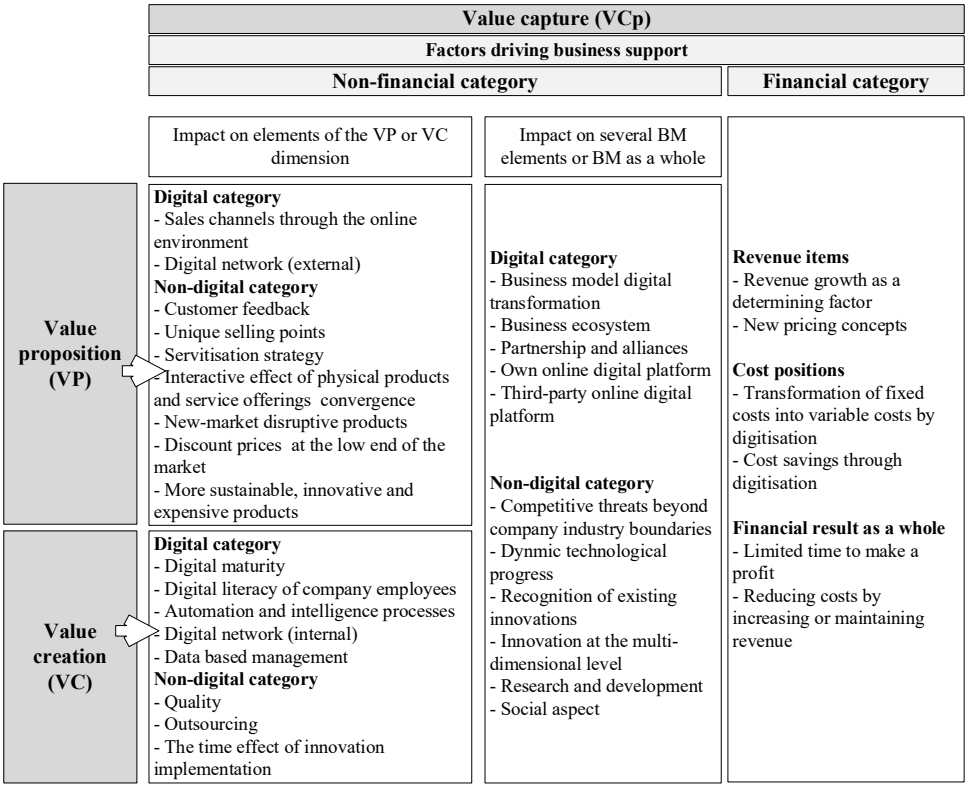


Fig. 3.2. Factors driving business support are interpreted in detail using the structure of the business model (created by the author).

There is a growing consensus that BM innovation is the key to business performance. BM innovation is more than product, service, or technology innovation. Innovation occurs when several dimensions of a business model are transformed to deliver value in a new way (Gassmann et al., 2014, p. 387). The term “transformation” defines the degree of strategic change in a business as a result of innovation (Goerzig & Bauernhansl, 2018, p. 6).

A company's ability to recognise and acknowledge new external knowledge, to acquire, transform and use it for its commercial purpose is very important for the innovative transformation of BM.

BM transformation is about what to do with an old and moribund value proposition and how to make a breakthrough by generating revenues from new channels. There are two ways to achieve this balance:

– finding your strong competitive advantage and improving to maintain your existing BM;

– identifying new customer needs in today's environment and creating a start-up that will become a future source of revenue, integrating it further into the core business (Gilbert et al., 2012, p. 8).

Digitalisation is a new innovation source for BM, making companies more competitive. Different sectors have different digitisation intensities: 1) fully digital industries based on digital content and data – software, electronic media, information goods (books, music, videos) on digital media; 2) sectors still dominated by physical activities are increasingly enabled by information technology (IT), digital internal and external communication networks – mining, construction, agriculture, various types of services such as utilities, cleaning, care and others (Moriset, 2018, p. 17).

Regardless of the digitalisation intent of the sector, a successful digital transformation of BM can bring benefits such as better insight and reach, higher productivity and the creation of new business models (Friedrich et al., 2011, p. 24). The digital transformation (DT) framework involves networking actors such as companies and customers in all segments of the value chain, using new technologies, and integrating e-business into existing business models. Electronic business (e-business) is the use of information and communication technology (ICT) to support and develop all aspects of business, both external and internal (Beynon-Davies, 2013, p. 464). E-business activities include exchanging information over the Internet, making online payments, expanding the geography of workplaces, providing more opportunities for outsourcing (Moriset, 2018, p. 17), and managing and automating business processes (inbound/outbound logistics, production, and process control operations, marketing and sales, customer service) (Jain, 2021, p. 6).

In order to assess the importance of the identified factors and their practical impact, three different independent business lines have been selected. They are discussed below using the universal BM, which includes a set of elements and their interactions and reflects the business logic of each specific business line.

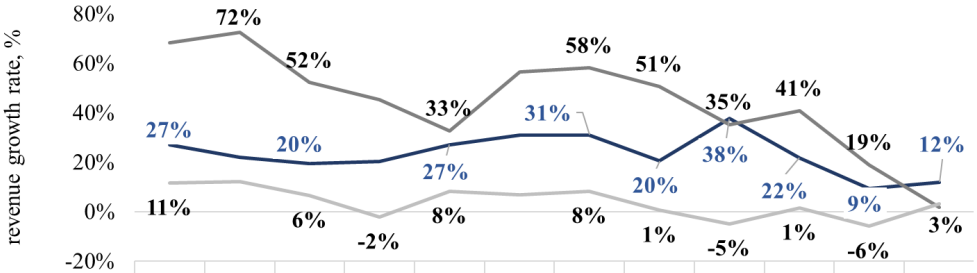
The identified factors' importance and practical impact on three independent business lines

1. The impact of online sales channels on revenue growth. Electronic commerce (e-commerce) solutions in Latvia from 2018 to 2022

The business line describes how online sales channels provide a stable revenue stream. E-commerce is part of e-business (Kabugumila, 2016, p. 10; Moriset, 2018, p. 17). E-commerce is the process of selling and buying products online, providing an easy way to sell products to a large number of customers, and it is divided into several types – business-to-business, business-to-consumer, consumer-to-business and consumer-to-consumer (Jain, 2021, p. 6; Singh et al., 2021, 8; Kabugumila, 2016, p. 10; Moriset, 2018, p. 17). E-commerce has changed shopping habits – online traders benefit from low costs, while shoppers can easily access a huge range of products wherever they are (Moriset, 2018, p. 17). A new type of sales channel in a digital environment, competing with "physical" points of sale, contributes to the growth of multichannel forms of commerce (Moriset, 2018, p. 17).

In 1993, with the launch of the World Wide Web (WWW), which provides access to various web browser resources, the use of its resources began to develop rapidly (A Short History of the Web, 2024). A huge increase in users opened up the possibility of commercialising websites, giving rise to a new term for the electronic environment: electronic commerce or e-commerce (Gudele, 2022).

Annual reports of the three major global e-commerce players, Amazon, Alibaba, and eBay, show that revenue growth is the key factor for sustainable BM in e-commerce (Amazon annual reports, 2024; eBay annual reports and proxy statements, 2023; Alibaba Earnings and Financials, 2023). With e-commerce platform holders acting as intermediaries between manufacturers, other suppliers, and the end consumer demand, it is important to maintain a stable profitability ratio alongside the revenue growth factor. Process automation, staff training, and the time effect of innovation allow positive financial results to be sustained (Fig. 3.3).



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Amazon	27%	22%	20%	20%	27%	31%	31%	20%	38%	22%	9%	12%
Alibaba	68%	72%	52%	45%	33%	57%	58%	51%	35%	41%	19%	2%
eBay	11%	12%	6%	-2%	8%	7%	8%	1%	-5%	1%	-6%	3%

Fig. 3.3. Amazon, eBay, and Alibaba Group revenue growth rate (%) 2012–2023 (compiled by the author using data from Amazon, Alibaba, eBay annual reports).

By analysing the BM, financial and non-financial annual reports of three major players in the global e-commerce market, the supporting factors driving e-commerce business were identified and grouped:

– digital non-financial category factors – sales channels through the online environment, own online digital platform, process automation, digital maturity of the company, and digital literacy of the company's employees;

– non-digital, non-financial category factors – the time effect of innovation implementation;

– financial category factors – revenue growth as a determining factor, and limited time to make a profit.

The impact of e-commerce solutions on the revenue dynamics of Latvian businesses is reviewed below. The dataset selected for the analysis includes 565 capital companies registered in Latvia (hereafter referred to as *e-capital companies*), 131 of the included e-capital companies selected by the industry "Internet shops, indirect trade" (hereafter referred to as *e-shops*) and 434 of the included e-capital companies whose main industries are different from the industry "Internet shops", e-commerce acting only as an additional sales channel (hereafter referred to as *other e-capital companies*). For a selected dataset for further analysis, financial information has been extracted from companies' annual reports for the period 2018–2022.

An analysis of the e-commerce sector of Latvian business reveals that the primary source of revenue from digital sales channels in a short period has provided a major advantage, ensuring a rapid increase in revenues in the restrictive environment of the COVID-19 pandemic at a time when e-commerce channels had not yet been established for other market players. *E-shop revenue grew by 19 % in 2019, by 21 % in 2020, and by 15 % in 2021*, in line with other e-commerce players, and continued to grow in 2022, but only by 2 %. The average revenue growth of *other e-capital companies* follows a different trend, with growth in the restrictive environment of the COVID-19 pandemic similar to the pre-COVID-19 pandemic period, 9 % in 2019 and 8 % in 2020, with faster growth in subsequent years, 16 % in 2021 and 13 % in 2022 (Fig. 3.4).

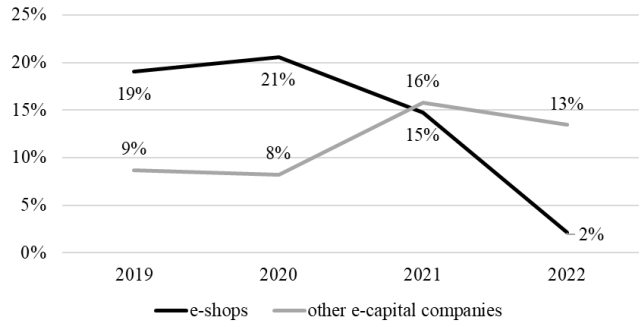


Fig. 3.4. Growth in e-shops and other e-capital company revenue (%) from 2018 to 2022 (created by the author using the Firmas.lv database).

Summarising the information on the changes in revenue growth of Latvian e-capital companies from 2019 to 2022, it can be concluded that the positive impact of e-commerce works more effectively in combination with other product/service sales channels to ensure sustainable business development.

2. The impact of disruptive innovation on information product development and revenue retention

The information products business line describes how disruptive innovations influence BM's transformation by offering new revenue streams.

An information good or product (both terms are used in several sources, hereafter "product") is generally defined as a product whose main market value is the information it contains (e.g. books) (Vafopoulos, 2011, p. 136). Digitisation changed the definition of an information product by separating the information product from the medium of transmission (Vafopoulos, 2011, p. 136). Shapiro and Varim (1999) redefined the information product as follows: anything that can be digitised is an information product (books, databases, films, music, a website, a stock quotation) (Shapiro & Varim, 1999, p. 352).

Web technologies make information editable, uniquely definable, and compatible with almost any digital format. These functions have changed the traditional processes of production, exchange, and consumption. In just a few years, the web has been transformed into a vast repository and distribution channel for data and information (Vafopoulos, 2011, p. 136).

In order to assess and track the manifestation of the identified factors, the Yellow Pages (YP) business line, which is a prime example of the digital transformation of a business model, is selected as a case study for the transformation of an information product. The evolution of BM in this particular industry shows that companies that have experienced the disruptive impact of innovation, which completely disrupted the long-established YP standard, have survived and, through the digital transformation of their business model, are transforming themselves into strong players in the digital marketing space, with new sources of revenue.

YP business activities correspond to the NACE Revision 2 statistical classification of economic activities in the European Community, 73.11 Advertising agency activities (NACE Rev. 2, 2008).

YP was founded in America in 1886. They are books printed on cheap yellow paper with telephone and address listings, arranged by business name, and grouped according to the type of business in a local area (Yellow Pages, 2024; Hyvönen et al., 2002). YP is a particularly important marketing channel for small businesses that are not able to organise large marketing campaigns to build a potential "customer portfolio". YP customers pay for advertising space highlighted among competitors' free entries.

In the 1990s, with the launch of the World Wide Web (WWW), YP publishers brought their databases online, creating various local online media directories under the address yellowpages.xx, which were set up in more than 75 countries around the world (Yellow Pages, 2024). The Internet

environment has multiplied the number of information users and opened up new marketing channels for advertisers.

As the usability of Internet resources evolved, the early 21st century saw the emergence of dominant platform providers – Google, Yahoo, Bing (Eisenmann et al., 2006, p. 11) – dominating the Internet platform ecosystem, with the advent of a growing number of players that went beyond the boundaries of the local area, breaking the standards of YP monopoly thinking. Google and its competitors' search platforms had a disruptive impact by transforming the online media directory business, including Yellow Pages (Christensen, 2003, p. 311). Starting in 2009, several large players in the YP market started to announce financial difficulties or bankruptcy proceedings.

The introduction of the Internet into the business has had a disruptive impact on the YP business model, completely transforming their value proposition to customers, and as a result, the newly created business model has much more value than in the beginning. The information advertising product at the basis of YP's business is not a physical product and can therefore be easily digitised. The role of printers will diminish and no longer be necessary when the media becomes fully electronic (Smith et al., 1999, p. 34). Thousands of digital copies can be prepared with one click and quickly sent online (Joseph, 2018, p. 12). The baseline and the transformed present BM of the value proposition dimension of the YP business model are shown schematically in Fig. 3.5.

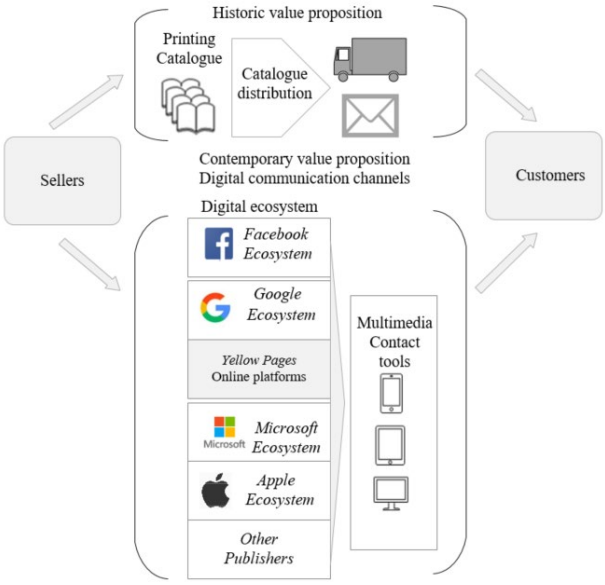


Fig. 3.5. Evolution of the value proposition dimension of the YP business model (created by the author).

Changing BM also changes the elements of the YP business model. Evolution of key elements of YP's value proposition:

– The customer – advertisers dimension remains unchanged; YP is still an important marketing channel for small businesses.

– The components of the information advertising product, which were originally just address data units, were modified over time. Compared to printed publications, the Internet does not limit the number of items of information and allows traders to publish the full range of products, descriptions, instructions, and price lists. The advantage of the Internet also allows us to publish the most up-to-date information in real time and to announce current events – price promotions, events, changes to opening hours, and new price lists.

– Information advertising products – from highlighted lines in print media to popular information advertising digital products: promotion-marketing products (Google ads, search engine optimization (SEO), pay per click (PPC) and others); WEB presence products (E-commerce, webshop solutions development, website and others).

– Channels for displaying and presenting promotional information products – with the development of the Internet, the number of devices where information can be accessed online is increasing: desktops, laptops, tablet PCs, and smartphones.

– The distribution channels for the information advertising product – the distribution of a print run is replaced by an increase in website traffic and, later, by the expansion of distribution channels in cooperation with popular websites and digital platforms. The platform concept came as a disruptive innovation, completely unexpectedly, to several sectors. The platform business is growing rapidly and starting to dominate the economy. YP companies, on the other hand, strengthened their internal infrastructure and knowledge base by setting up their own local live media directories, which later allowed them to easily expand their range of services and provide their clients with digital marketing services via third-party platforms, in addition to placing advertising on their products. Digital service platforms in the business ecosystem are powered by a large number of users. Hence the development of YP web resources, bringing together a large number of companies and networking users, ensures the sustainability of Google's platform. The business ecosystem makes competitors partners (Christensen, 2003, p. 311).

Revenue risk

In order to provide the infrastructure for a YP business to exist, the required level of revenue must be achieved. YP companies identify the decline in revenue from traditional YP print products as a key operational risk in their 2018 annual reports, while the highly competitive digital marketing market makes it impossible to forecast revenue from new business (Yellow Pages Limited Reports & Filings, 2018; Consolidated Financial Statements for the financial year ended 31 December 2018, European Directories Mido S. a. r. l., Luxembourg, 2018). The strategic challenge for YP companies is to balance the decline in revenue from historic print directories with the new growth in digital marketing (Fig. 3.6).

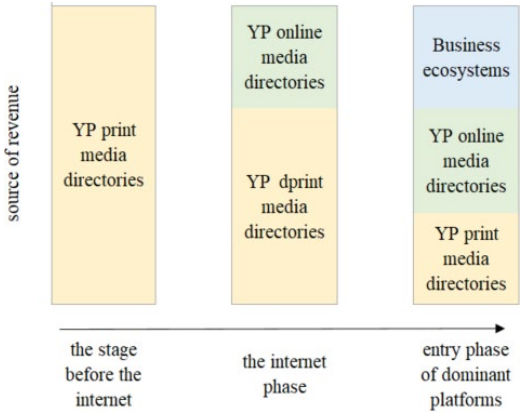


Fig. 3.6. Evolution of YP revenue redistribution (created by the author).

Although digital marketing products are gradually replacing print media, they are not yet able to fully compensate for the lost revenue from print media, which is declining much faster than expected. If revenues from digital products do not increase significantly, the company's cash flow, results of operations and financial position will be negative (Yellow Pages Limited Reports & Filings, 2018).

With the transformation of the value proposition dimension of BM, the value creation and cost structure fundamentals are also changing. The key value-creation stages of the YP business are the sale of promotional information products, the creation and maintenance of a database of information items, the creation of promotional information products, and the distribution of promotional information products. The sequencing of these value chains is ensured through the interaction of external and internal resources, which are effectively balanced, taking into account the resources and competencies available internally. Technological developments have opened up new opportunities for innovation in improving value-creation processes, which, from time to time, have an impact on the value supply chain (Joseph, 2018, p. 12). With the introduction of IT technologies, there are also risks:

– significant additional costs related to IT investments, modifications of existing products and development of new products and technologies;

– time effects, as they may not be able to upgrade their information technology systems to effectively manage increased levels of traffic and may not be able to develop and market new types

of products in a timely and efficient manner, as markets are characterised by rapidly changing technology;

– introducing new products that meet the requirements of advertising customers and end-users (Yellow Pages Limited Reports & Filings, 2018).

By sequentially exploring the evolution of the YP business and using the BM framework, the supporting factors driving the YP business were identified and grouped.

– Digital non-financial category factors: business model digital transformation, own online digital platform, third-party online digital platform, business ecosystems, sales channels through the online environment, digital maturity of the company, digital literacy of the company's employees.

– Non-digital non-financial category factors: competitive threats from outside company industry boundaries, new-market disruptive products, dynamic technological progress, recognition of existing innovations, innovation at the multi-dimensional level, and servitisation strategy.

– Financial category factors: revenue growth as a determining factor, new pricing concepts, cost savings through digitisation, and reducing costs by increasing or maintaining revenue.

3. The impact of digitisation of the supply and communication network on service business quality and process efficiency

It is described how the digitisation of the delivery and communication network contributes to service quality and reduces costs.

The main objectives of digital transformation are to capture new data and use it to revise old processes. A data-driven approach creates the opportunity to gain new knowledge and rethink BM (Schallmo et al., 2017, p. 17). Between 1992 and 2002, digital technologies underwent major changes: (1) computing power increased significantly, growing at an average annual rate of 52 % and allowing organisations to store and analyse larger volumes of data than ever before; (2) computing costs remained lower; (3) bandwidth remained cheaper, technological opportunities were expanding. Advanced data processing combined with powerful analytics tools complements human capacity, enabling advanced analysis to make more effective decisions to change how businesses operate. Increasing the capacity and efficiency of technology enables significant cost reductions for both internal and external operations. New technologies are blurring the boundaries between the physical and digital worlds by providing real-time access to datasets from physical assets and devices (Mussomeli et al., 2017, p. 21). Real-time and networked product and service information will allow people, businesses, and machines to be connected and communicate with

each other, collecting, analysing and exchanging vast amounts of information on all kinds of activities (Friedrich et al., 2011, p. 24).

For business managers used to traditional linear data and communications, the shift to real-time access to data is fundamentally transforming the way they do business (Mussomeli et al., 2017, p. 21). At the same time, business managers do not have to be digitally oriented, but it is more important to know your business, and not necessarily to have your own IT department (Seelos & Mair, 2007, p. 15). External partners can be brought in to implement the digital transformation project. As BM embarks on its digital transformation journey, managers must be prepared to face employee resistance to change (Aagaard et al., 202, p. 17).

To assess and track how to connect and use different modern technologies to digitise and integrate information from different sources that continuously drive physical work (Mussomeli et al., 2017, p. 21), an example of an industry-specific implementation of a digital supply network (DSN) within BM value creation is presented. The study has been validated in the project "Digitisation of Home Care Process Management and Operational Processes" (hereinafter – the project), which was developed for the company (hereinafter – Home Care) within the Social Entrepreneurship Grant Project No. 9.1.1.3 /15/I/001, “Support for Social Entrepreneurship”, and will be implemented in 2022–2023. The author initiated the project and, with the assistance of an EU grant, acted as project manager during its implementation. The project covers only the initial phase of the digitisation of the BM, but it is an important stage in the BM's digital transformation journey.

Before the project, the operational process in Home Care was organised along a traditional supply chain, with information moving in a linear flow, each step depending on the previous one. Inefficiencies in one stage of the chain can quickly lead to inefficiencies in other stages. The company's activities involve a large number of events and, therefore, a large volume of data and sensitive information, which is processed manually, with information from staff on care tasks being delayed and only processed at the end of the month. As the number of customers grows, so does the volume of information items. This chain of events is structured in a very structured way and is divided into two process streams.

1. Information and data process:

– a new customer referral or a change to an existing customer referral is received from the customer;

– the administration processes the basic information on the service provision, creates the appropriate documents, examines and interviews the client, assigns the responsible care worker, issues the care assignment, accepts the completed care assignment, creates a report, and pays for the completed work.

2. Physical care service provision, where the care worker provides the care services specified in the referral.

The project aims to develop and implement a new, innovative, client-centred model for the organisation and delivery of social care services. The project will result in a system that will integrate the company's work logistics into a central ERP system and will allow for increased operational productivity by digitising process planning and management, ensuring timely care and reducing the time for feedback by ensuring quality control.

While the physical service delivery flow remains unchanged, the information and document processing flow is moving from a linear supply chain to a dynamic communication exchange network, creating new interlinkages between processes (Fig. 3.7).

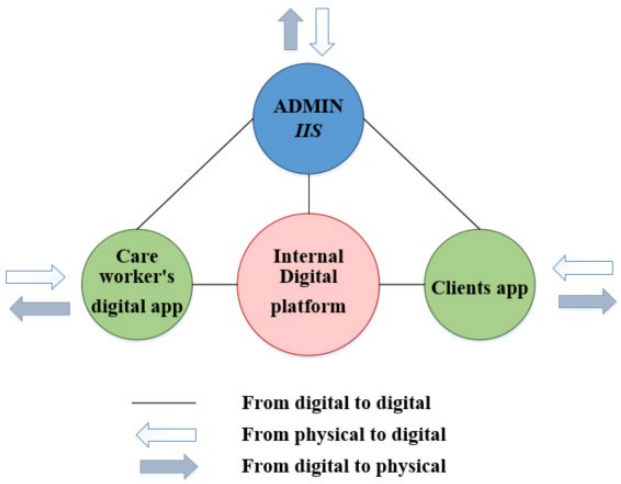


Fig. 3.7. Operational process according to the dynamic communication exchange network (adapted from Mussomeli et al., 2017).

Real-time access to data ensures a continuous flow of activity between the physical and digital worlds. This flow is enabled by the exchange of information through the "physical-digital-physical loop" (Mussomeli et al., 2017). The new interconnections between processes break down the separation of individual activities, transforming supply chains into efficient and predictable flows:

– Use of the care worker's digital application to communicate with administration, receive work orders, check completion status, and get information about the client. The combination of these activities ensures the continuous provision of services to clients.

– Use of a digital client application to communicate with the service recipient and their relatives.

– The use of an internal administrative information system for information input, process planning, electronic document storage, communication, management and control, integrating information from all the above applications.

The process of implementing the digital delivery network and the digital communication in Home Care operationalisation allowed us to assess the importance of the identified factors and identify a number of supporting factors driving the digital transformation of BM:

– Digital non-financial category factors – automation and intelligent processes, business model digital transformation, digital network, own online digital platform, digital maturity, digital literacy of company employees.

– Non-digital non-financial category factors – interactive effect of physical products and service offerings convergence, innovation at the multi-dimensional level.

– Financial category factors – cost savings through digitisation, reducing costs by increasing or maintaining revenue.

4. Digital maturity of capital companies – correlation with companies' financial results

The chapter contains 36 pages, six tables, and 25 figures.

The COVID-19 pandemic has clearly shown that companies need to use innovative solutions to survive in today's economy. Digitalisation processes are accelerating the development of all sectors and enabling their connectivity, speed and control, including easy access to production, customer and market data (Tutak & Brodny, 2022, p. 23). Activities that cannot be digitised need to integrate technology, empowering people and increasing the quality of their work, thus removing the traditional and creating new professions involving control functions, innovation and critical thinking. But everything that cannot be digitised and automated is increasing in value (Lee et al., 2018, p. 24). A positive factor for this trend is the possibility of building more profitable businesses as the need for labour decreases (Eremina et al., 2019, p. 13), but this is not straightforward as digitalisation also involves continuous training of people, and the skills of the workforce need to be very high and therefore well paid (Lee et al., 2018, p. 24). With the advent of digitalisation, the term "digital maturity" has emerged in the scientific literature to describe a company's willingness and ability to change and use innovative technologies to remain competitive in the market. The ability of a company to recognise and acknowledge new external knowledge, to acquire, transform and use it for its commercial purpose in the BM for innovative transformation is crucial (Raymond et al., 2016, p. 14).

Several studies show that companies with higher digital maturity earn more (Aagaard et al., 2021, p. 17), while the Boston Consulting Group claims that companies that have reached their maximum digital maturity increase turnover by 20 % and reduce costs by 30 % (Field et al., 2014, p. 7). According to Deloitte and MIT Sloan Management, digital maturity aims to adapt an organisation to compete effectively in a digital environment; it is an ongoing process (Kane et al., 2016, p. 28).

One of the tools used to measure a company's digital maturity is a questionnaire survey of companies and an interpretation of their responses. In recent years, dozens of models have been developed to assess the digital maturity of companies. The range of factors adopted in these models varies widely and depends on the authors' object of study or on the industry under study (Linder &

Cantrell, 2001, p. 15). Globally, various questionnaire-based tools, measurement criteria and indices have been developed to determine the level of digital development.

Developing a questionnaire to assess companies' digital maturity

The structure of the questionnaire is based on the BM template concept and the impact of its dimensions on the financial result: 1) the value proposition dimension with its corresponding set of elements – customers, communication, and products; 2) the value creation dimension with a corresponding set of elements – personnel, processes, resources – which interact to form the cost stream of the company.

The questionnaire questions are grouped according to the impact of the factors driving business support identified in Part 2 of the non-financial category of value capture – the non-financial digital category includes automation, digital network, digital development, and digital data. The non-financial, non-digital category includes the quality of the business organisation and disruptive innovation (Fig. 4.1).

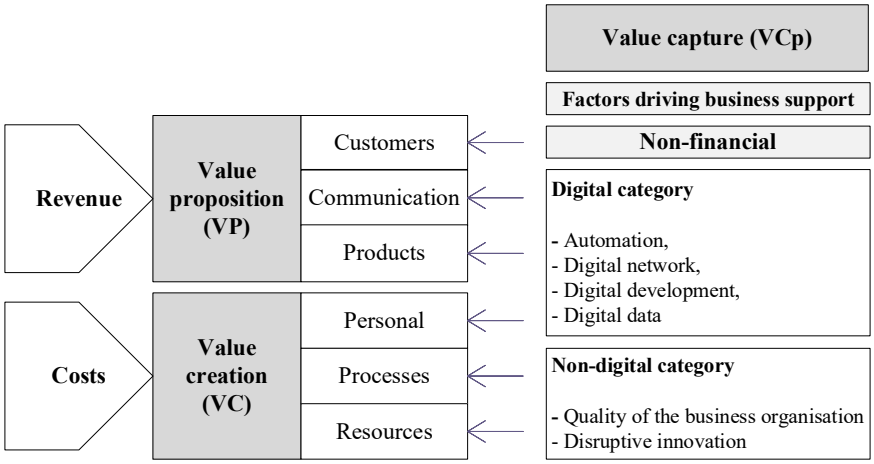
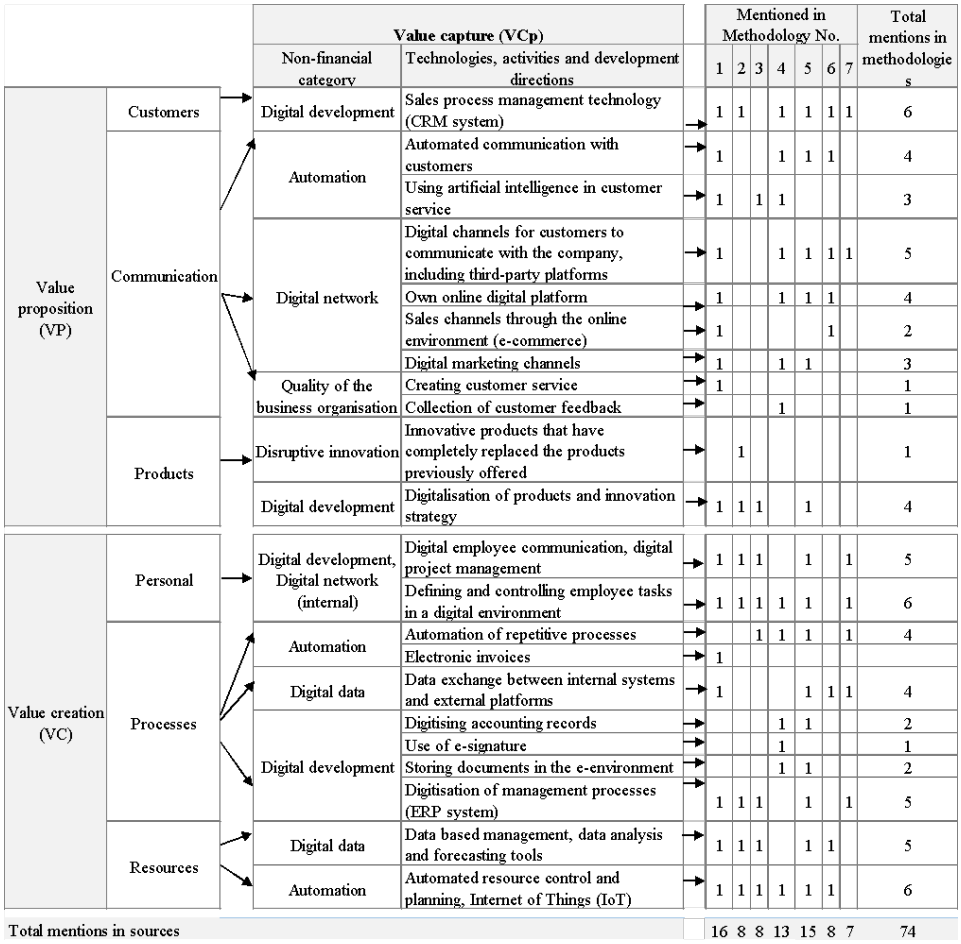


Fig. 4.1. Design of the questionnaire structure according to the BM template concept (created by the author).

Seven different methodologies for measuring the digital maturity of companies were explored to develop the qualitative content of the questionnaire framework (JRC Seville, 2022, p. 26; Kane et al., 2016, p. 28; Aagaard et al., 2021, p. 17); Project "Gudrā Latvija", 2019; Field et

al., 2014, p. 7; SPARK, 2016; Latvijas Atveseļošanas un noturības mehānisma plāna 2. komponentes "Digitālā transformācija" 2.2. reformu un investīciju virziena "Uzņēmumu digitālā transformācija un inovācijas" 2.2.1. r. "Uzņēmējdarbības digitālās transformācijas pilna cikla atbalsta izveide ar reģionālo tvērumu" 2.2.1.2.i. investīcijas "Atbalsts procesu digitalizācijai komercdarbībā" īstenošanas noteikumi, 2023).

Based on the analysis of the above methodologies, the questionnaire structure, activities, directions and technologies for companies choosing a digital development path are summarised in Fig. 4.2, with the digital maturity characteristics of companies highlighted by the authors of each methodology.



		Value capture (VCp)		Mentioned in Methodology No.							Total mentions in methodologies
		Non-financial category	Technologies, activities and development directions	1	2	3	4	5	6	7	
Value proposition (VP)	Customers	Digital development	Sales process management technology (CRM system)	1	1		1	1	1	1	6
	Communication	Automation	Automated communication with customers	1			1	1	1		4
			Using artificial intelligence in customer service	1		1	1				3
		Digital network	Digital channels for customers to communicate with the company, including third-party platforms	1			1	1	1	1	5
			Own online digital platform	1			1	1	1		4
			Sales channels through the online environment (e-commerce)	1					1		2
			Digital marketing channels	1			1	1			3
		Quality of the business organisation	Creating customer service	1							1
			Collection of customer feedback				1				1
	Products	Disruptive innovation	Innovative products that have completely replaced the products previously offered		1						1
		Digital development	Digitalisation of products and innovation strategy	1	1	1		1			4
Value creation (VC)	Personal	Digital development, Digital network (internal)	Digital employee communication, digital project management	1	1	1		1		1	5
			Defining and controlling employee tasks in a digital environment	1	1	1	1	1		1	6
	Processes	Automation	Automation of repetitive processes			1	1	1		1	4
			Electronic invoices	1							
		Digital data	Data exchange between internal systems and external platforms	1				1	1	1	4
		Digital development	Digitising accounting records				1	1			2
			Use of e-signature				1				1
			Storing documents in the e-environment				1	1			2
			Digitisation of management processes (ERP system)	1	1	1		1		1	5
	Resources	Digital data	Data based management, data analysis and forecasting tools	1	1	1		1	1		5
		Automation	Automated resource control and planning, Internet of Things (IoT)	1	1	1	1	1	1		6
Total mentions in sources				16	8	8	13	15	8	7	74

Fig. 4.2. Analysis of the methodologies for assessing the digital maturity of companies according to the questionnaire structure (created by the author).

Based on the questionnaire structure developed, the questionnaire was filled in sequentially with the following questions. The questionnaire for the entrepreneurs' self-assessment interview was clearly structured (Weller, 1998, p. 45; Creswell, 2007, p. 395), with closed questions to make the data from the self-assessment interview comparable, clear, easy to code for further analysis and subjectively non-interpretable. The structure of the questionnaire makes it easier to use in future research.

Each answer to the questionnaire was given a certain number of points, based on how and to what degree the answer was indicative of digital development.

To simplify the subsequent processing of the responses, the groups of questions were coded according to the nature of the BM elements. The groups of questions relating to the value proposition and the revenue stream of the company (revenue) are coded as follows: customers (VP_CL), customer communication and sales channels (VP_CC), product (VP_PR). Issues related to value creation and impacting on cost (costs) are marked as follows: staff (VR_ST), processes (VR_PR), resource control and planning (VR_RE). General issues relating to company strategy and BM in general have not been assigned an impact on revenues or costs and are marked as BM as a whole (Table 4.1).

Table 4.1

BM item codes for questionnaire item processing (created by the author)

Codes	Titles of questionnaire sections and question groups	Impact on profit/loss positions – revenue or costs
BM as a whole		No impact assigned
VP	**Value proposition**	
VP_CL	Clients	Revenue
VP_CC	Customer communication and sales channels, including product distribution channels and marketing activities	Revenue
VP_PR	Products	Revenue
VC	**Value creation**	
VC_ST	Staff	Costs
VC_PR	Processes	Costs
VC_RE	Resource control and planning	Costs

The maximum score that could be obtained from the analysis of the responses was 99, which was assumed to represent the highest level of digital maturity of the company. The total score is split into the following directions: items affecting revenue flow with a maximum score of 45 and items affecting cost flow with a maximum score of 54. The maximum score for the general questionnaire questions relating to the company's strategy and BM as a whole, and reflecting the respondents' subjective self-assessment of their digital maturity, is 16.

To assess the impact of a company's digital maturity on its revenue and cost dynamics, companies' responses were scored as a percentage of the maximum possible score.

The questionnaire is structured in three main sections. The first section contains general information; the second and third are organised around the structure of the questionnaire, which is based on the universal BM template.

On the basis of the questionnaire, self-assessment interviews were carried out starting in June 2021 and continued in early 2023, after the questionnaire had been refined. As a result of the structured interviews for the self-assessment of the merchants, a case study analysis (Noor, 2008, p. 3) of the companies concerned was carried out, and the degree of digital maturity of the companies they run was ascertained.

The sample of traders was selected using a typological qualitative sampling method (stratified sampling) (Lohr, 2009, p. 494), with the proportion of group members being determined according to the share of industry members in the total industry structure of the economy (NACE Rev. 2, 2008). A total of 70 experts from different industries, managers of capital companies and their departments, were interviewed for the situation study, 62 of them experts from small and micro-capital companies and eight experts from medium and large capital companies from different industries for the comparison of the results.

Results of self-assessment interviews of entrepreneurs

When assessing the responses to the first group of questions on the overall characteristics of the digital development of the company, which reflects the subjective self-assessment of the digital maturity of entrepreneurs and is based on the respondent's view of the level of digital development and future strategy of their company, 58 % of respondents (40 respondents) rate the digital development of their company higher compared to the scores obtained in the questionnaire and consider that digital solutions are widely used in their business. In their additional comments, respondents indicate that they recognise the need for digitisation, but for a small and micro-capital company, the costs of implementation and maintenance are disproportionate to the benefits. In additional comments, respondents noted the need for public support for companies' BM digitisation activities, which is also currently being implemented in practice by the Decision of the European Parliament and of the Council (Establishing the Digital Decade Policy Programme 2030, 2022).

The results for the second and third sections of the questionnaire show a low level of digital maturity, with an average score of 39 % of the maximum possible score for the highest level of digital maturity. On the other hand, when analysing the distribution of activities between the VP and VC dimensions of the business model, it can be concluded that the VP dimension, which affects revenue growth, received 31 % of the total maximum score attributable to this dimension. The VC dimension, which has an impact on cost reduction, received 45 % of the total maximum score for this dimension (Table 4.2).

Table 4.2

Average response rate of the maximum BM within dimensions affecting a revenue or cost item (created by the author)

Position name	Impact on the BM dimension	Maximum points to be obtained per heading	Average number of points per questionnaire	Number of points obtained (average of maximum)
Revenue	Value proposition (VP)	45	14	31 %
Costs	Value creation (VC)	54	25	45 %
Total	BM as a whole (BM)	**99**	**39**	**39 %**

According to the overall level of digitalisation of the BM, the questionnaires were equally divided into the following groups: below average – 37 respondents, representing 53 % of the total; above average – 33 respondents, representing 47 % of the total.

Given the higher degree of digitisation of the VP dimension elements compared to the VC dimension elements, it can be assumed that the surveyed companies increase their profits at the expense of cost reduction and that digitisation has a lower impact on the revenue share.

The impact of digital maturity of capital companies on revenue and profit dynamics

Several studies have shown that the digitalisation of BM contributes to both increased revenues and reduced direct, general and administrative costs. The authors point out that the cost reduction effect is more significant for large companies than for small companies, while the impact of e-business on the elements of the BM value proposition (sales, e-marketing, e-commerce, customer service), and hence on revenue growth, is much greater regardless of the size of the company (Johnston et al., 2007, p. 8).

In order to assess whether the above-mentioned trend is also characteristic of the financial growth of Latvian small and micro-capital companies, the relationship between the obtained and assessed respondents' digital maturity levels and their financial indicators is examined. For the financial analysis, the financial data of the companies obtained in Section 1 will be used, which also includes the financial data of the respondents. Data from the last two available annual profit and loss statements for the years 2021 and 2022 are used for the analysis. The 2020 data, whose revenues and profits were significantly affected by the external factor of the COVID-19 pandemic, were not included in the analysis.

The analysis of the respondents' financial data shows that a higher percentage of respondents (79 %) show an increase in revenue in 2022 compared to 2021. Mainly, all of the respondents reported a positive financial result in their 2022 accounts; 82 % of the respondents ended the year with a profit, but only half of them reported an increase in profit. Thus, fewer respondents reported an increase in profit in their annual accounts than an increase in turnover (Fig. 4.3).

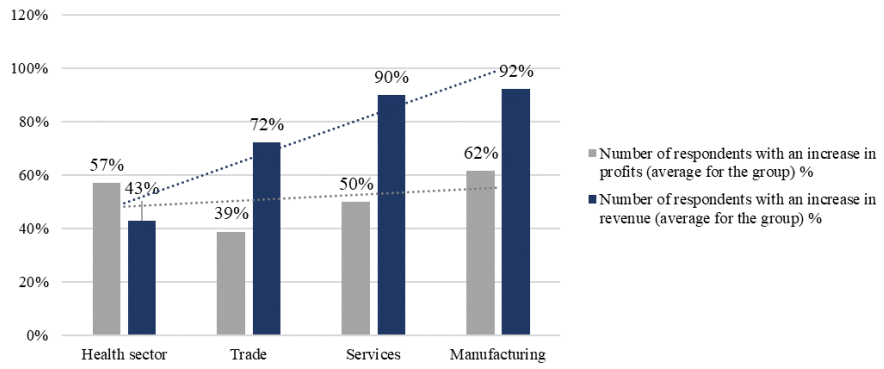


Fig. 4.3. The proportion of respondents with revenue and profit growth by industry (created by the author using the Firmas.lv database).

Profit as a positive financial result is an important indicator, but balanced financial performance is key to a company's sustainability.

Balanced financial performance

Balanced financial performance is characterised by a higher rate of growth of profits relative to the rate of growth of revenue. This condition is met if the rate of growth of turnover is faster than the rate of growth of costs (Aniskins et al., 2015).

The analysis of the relationship between digital maturity and balanced growth in financial performance shows that digitisation of elements of the VP dimension has a greater economic impact at lower levels of digitisation, which has an impact on revenue growth. Consequently, the growth rate of revenues exceeds the growth rate of profits and represents an unbalanced financial growth for the majority (69 %) of respondents. In addition, companies with a higher level of digital maturity achieve revenue growth faster than profit growth (Fig. 4.4). This trend is more typical for medium and large corporations, but also exists for small and micro-capital companies.

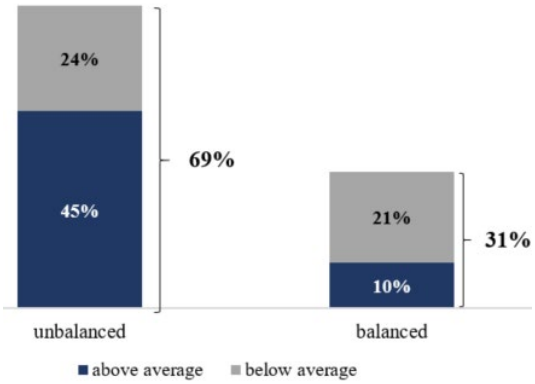


Fig. 4.4. The proportion of respondents with balanced and unbalanced financial growth according to BM-dimension digitalisation level groups (created by the author using the Firmas.lv database).

The result of the sub-section on the correlation of digital maturity of companies with their financial performance is similar to the findings of the Schulish School of Business, York University research group (Johnston et al., 2007, p. 8) that, regardless of the size of the company, the digitalisation of elements of the BM value proposition (sales, e-marketing, e-commerce, customer service) has a much greater impact and driving revenue growth. A World Economic Forum Report also notes that 45 % of business leaders believe that increasing revenue through BM digitalisation should be the first priority (Digital Transformation of Industries, 2016, p. 45). However, balanced

financial growth can only be achieved through the interaction of all elements of the BM dimensions, combining and adapting their different digitalisation capabilities.

The research conducted in this sub-section can serve as a guide for small and micro-capital company managers when starting the digital transformation of BM and should be taken into account when designing balanced financial development strategies. Several sources (JRC Seville, 2022, p. 26; Field et al., 2014, p. 7) additionally recommend assessing the progress of companies' digital maturity at several stages of the digital transformation of BM. It should also be noted that there are various barriers and drivers to e-business adoption (Wielicki & Arendt, 2010, p. 13; Raymond et al., 2016, p. 14), including many external factors that can affect the financial performance of a business, as was concluded in the first chapter of the study.

Conclusions

1. An analysis of five years of financial statement data for Latvian small and micro-cap companies shows that a number of external factors have a significant impact on the financial performance of the business: 1) considering that the legal framework was changed in 2018 and profits reinvested in the development of a company are not taxed, however, 20 % of small and micro enterprises, whose financial result is a loss, are unable to use the aforementioned norm, as well as small and micro enterprises do not have sufficient capacity to invest in research and development, the proportion of innovative enterprises in Latvia is one of the lowest in the EU, and the digital development of business in Latvia is assessed below the average level of EU countries; 2) in 2020, the onset of the COVID-19 pandemic led to a sharp decline in companies' key financial indicators – revenue, profits, profitability – with all sectors, except medicine and pharmaceuticals and agriculture, being affected by the decline in revenue, with tourism, hospitality and leisure being the most affected; 3) a sharp rise in energy prices due to the outbreak of hostilities in Ukraine has inevitably led to high inflation. The increase in business revenue in 2022 is mainly due to a rise in general prices, while expensive inputs have not contributed to the growth in business profitability, despite the increase in revenue.
2. The analysis shows that there are a series of risks operating sequentially or simultaneously that affect the sustainability of a business today, but there is no single approach to overcoming the negative impact of these risks in small and micro enterprises, regardless of the sector and the length of time the business has been in operation. To ensure the resilience of capital companies to the negative impact of external factors, innovative business management solutions need to be introduced, which are inherent in today's digital environment.
3. The digital transformation of the business can only be achieved in a coherent development with the digital transformation of the public sector and government and data-driven growth. Already today, public infrastructure is contributing to the development of a digital business environment by creating a favourable and modern business environment based on the use of modern technologies, by creating e-services and common digital platforms for business.
4. The literature review identifies 33 important factors that contribute to a sustainable, profitable business. The factors are grouped into categories according to their impact. The factors influencing digital innovation are grouped under the non-financial digital category, which

includes the following groups: digital data, automation, digital communication networks, and digital development. The other factors in the non-financial category are grouped under the non-digital non-financial category into two groups, one according to the qualitative business organisation characteristics and the other resulting from disruptive innovation. The financial category includes factors that help to implement profit strategies by improving the revenue/cost structure.

5. The results of the entrepreneur survey and the analysis of the non-financial reports of large world companies and corporations show that business-specific factors such as product and service quality, digital literacy of company employees, the digital maturity of the company, data-based management and sales channels through the online environment have an impact on the performance of a capital company, regardless of its size. While automation through artificial intelligence, digital platforms, partnerships, alliances, and research and development are typical for large world companies and corporations, customer feedback, unique selling points, recognition of existing innovations, and implementation in their business processes are important for Latvian small and micro-capital companies.
6. In order to trace the profit generation mechanism, the factors influencing the financial result are grouped in accordance with the elements of the business model dimensions. Some of the factors belong to the value proposition business model elements and affect the company's revenue stream, while others belong to the value creation business model elements and affect the cost structure.
7. The practical impact of the factors on the financial performance of the different selected business lines, interpreted through the framework of the universal business model, is discussed with examples of three business lines: the impact of online sales channels (e-commerce) on revenue growth; the evolution of information products; the digital transformation of the services business model.
   - Unlike the world's leading e-commerce players, Latvian small and micro-capital companies only achieve the positive effects of e-commerce when combined with other product/service distribution channels to ensure sustainable development.
   - The impact of disruptive innovation on the evolution of information products was seen when using the YP business model as an example. The example shows that it is important to discover the importance of each element of the business model over a period of time in

order to be able to phase out old, unprofitable elements of the value proposition and value creation. It is also important to do research to discover the potential of the business model early on and to replace declining revenues from old products with revenues from new sources.

- The introduction of a digital supply network (DSN) within the Home Care business model offers the opportunity to significantly reduce the cost of both internal and external operations and improve the quality of service.

8. Based on international experience and identified factors that contribute to sustainable, profitable business, a methodology for assessing a company's digital maturity has been developed, including the elements of digital maturity and their assessment criteria. In 2021–2023, based on the developed methodology, a structured self-assessment interview of Latvian entrepreneurs was carried out to find out the digital maturity of the companies they run through a situation analysis. The results show a low level of digital maturity of companies, with an average score of 39 % of the total maximum.
9. The analysis of the relationship between the digital maturity of a capital company and the balanced growth of financial indicators shows that the digitisation of elements of the value proposition dimension of the business model has a greater economic impact at lower levels of digitisation, which has an impact on revenue growth. The World Economic Forum's Digital Enterprise 2016 Report also notes that 45 % of business leaders believe that increasing revenue through digitalisation of the business model should be the first priority. However, balanced financial growth of a company can only be achieved through the interaction of all elements of the BM dimensions, combining and adapting their different digitisation capabilities.
10. The objectives of the Thesis have been fulfilled, and the goal has been achieved.
11. The results of the study confirm the hypotheses put forward in the Thesis:
    - In the digital age, there are three categories of factors: 1) non-financial digital factors; 2) non-financial factors unrelated to digitalisation (non-financial non-digital factors); 3) financial factors that have a significant impact on the financial performance of small and micro-capital companies.
    - In the digital age, the positive financial performance of small and micro-capital companies can be achieved through the identified factors, the impact of which can be observed through improvements in business model elements.

– There is a correlation between the digital maturity of small and micro-capital companies and their financial results.

Proposals for small and micro-capital companies

1. To monitor the principles of balanced financial growth of the business, at least once a year, by preparing a financial budget and controlling the dynamics of profit and revenue growth dynamics.
2. To review the company's digital maturity self-assessment on a regular basis (at least annually) to activate a compensation mechanism to improve business performance.
3. To take into account the set of factors identified, in particular those factors which, in combination with financial factors, provide the greatest positive financial outcome, while refining the business model in alignment with the specific business direction. But whatever the business:
   – promote digital literacy of employees so that there is no resistance and employees are motivated to participate in the digital transformation of the company's business model;
   – promote the digital maturity of the partners, thus contributing to the digital maturity of your company;
   – take the opportunity to organise business management based on data analysis;
   – ensure the continued presence of up-to-date information about your products and services in the public digital environment;
   – operate within the principles of the start-up phase, regardless of the duration of the company in today's dynamically changing business environment;
   – digitise all processes that can be digitised, replacing unproductive work.

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