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Data Descriptor

Technology Transfer from Nordic Capital Parenting Companies to Lithuanian and Estonian Subsidiaries or Joint Capital Companies: The Analysis of the Obtained Primary Data

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Abstract: Scientific literature describes various factors that influence knowledge transfer and successful adoption, assimilation, transformation, and exploitation. These four components are mostly related to the absorptive capacity of the company. However, more factors influence both developments of innovations or patents and the lack of ability to use external and internal information (knowledge). Using external knowledge is often associated with previous experience, or even a point of view towards investment in innovation or developing patents. Thus, the companies might be divided into innovators and imitators. The research addresses several problems (questions). What external factors are influencing knowledge transfer and further development of innovation? What factors are influencing absorptive capacity? What factors are essential in cooperation and knowledge transfer to switch from a linear to a circular economy? To collect data, a computer-assisted telephone interviewing method was used. The survey was addressed to subsidiaries, joint companies, Lithuanian-Nordic, Estonian-Nordic capital companies, or companies in close collaboration with the Nordic countries. A total of 158 companies from Estonia and Lithuania agreed to answer all the questions. The survey involves companies of various sizes and ages from different business sectors. Reliability was denoted, as Cronbach's Alpha was estimated. The KMO test was used to measure whether the data were suitable for principal component analysis. Additionally, PCA was performed. PCA reduced the number of variables into an extracted number of components. The separate row of the component defined a linear composite of the component score that would be the expected value of the associated variable. The dataset may be used to develop interlinkages among the research mentioned above questions, and the results of introducing innovation, the company's size, and age might be used as control variables. The article aims to analyze the factors that determine innovation development and their interlinkages while technology is transferred from Nordic parenting companies to the subsidiaries. The article's results contribute to the interdisciplinary knowledge transfer, innovations, and internationalization field.

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Keywords: knowledge transfer; innovations; absorptive capacity; Nordic countries; Baltic countries; CATI

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1. Summary

Increasing numbers of scientific articles and studies on innovation, knowledge, and technology transfer into multidisciplinary fields [1] demonstrate the importance of technological development. Innovation is understood as one of the driving forces for business growth and technological development. Thus, knowledge and technology transfer and the ability to absorb it to use is essential for every company. The channels of knowledge and

transfer might be various [2,3], and all of them might be effective if a company can absorb the knowledge. One of the channels for know-how transfer is foreign direct investment or collaboration between domestic and international capital companies or universities, such as developing networks or joint projects.

Understanding these benefits from FDI [4], every country is motivated to stimulate inward FDI by employing various measures. However, sometimes, questions arise as to whether it pays back or what the successfully attracted FDI is. Does the host country benefit from "know-how"? Debates on such questions involve more than one knowledge success-influencing factor [5,6]. For example, from 2011 to 2021, Nordic countries were among the most innovative and had the highest number of patents, trademarks, and industrial designs [7]. The most significant average number per capita of registered patents was in Sweden (24102), followed by Finland (12506) [8]. Meanwhile, the average number of patents per capita registered in Lithuania and Estonia was only 232 and 276, respectively (Figure 1).

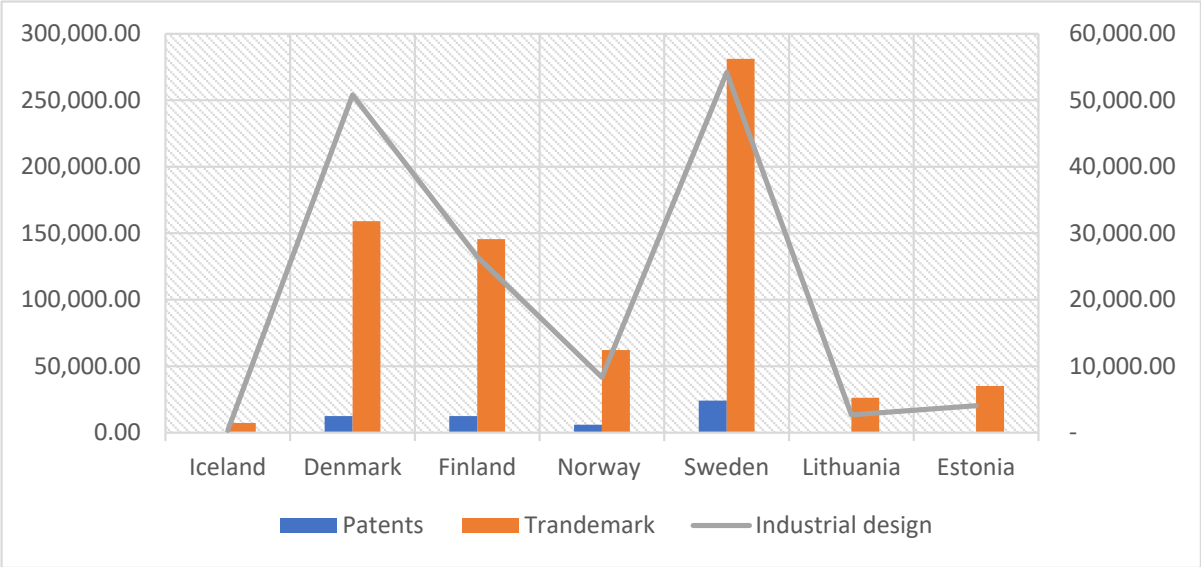


Figure 1. Average number of applications of patents, trademarks, and industrial per capita (2011–2020).

At the same time, the Swedish capital contributes to one fifth of inward FDI in Lithuania, and 22% of total inward FDI in Estonia is from Finland. Thus, the most significant volume of inward FDI flows from the Nordic countries to the Baltics. According to the sectors in Lithuania, the manufacturing sectors attract an essential part of inward FDI from Denmark (29%), Iceland (71%), and Norway (34%). Swedish companies mainly invest in banking, insurance (54%), and information technologies (24%). A total of 41% of inward FDI from Finland is linked to the wholesale and retail trade business sectors [8]. The Swedish capital occupies 78% of the banking sector in Estonia. In Estonia, the second sector that has attracted the most significant number of Nordic capital companies is construction and real estate, manufacturing contributes to 13%, and logistics and transportation are the most popular among Finish capital companies. Collected secondary data show the close collaboration between Nordic countries, Lithuania, and Estonia. However, effective know-how transfer from Nordic countries to Lithuania and Estonia is ambiguous. The scientific literature focuses on the factors that determine or limit knowledge and technology transfer or the company's innovativeness. However, most studies analyze external or internal factors that, in most articles, are described as limitations of the research. In addition, most essays concentrate on technology or knowledge transfer from an advanced economy to emerging or less developed host countries. The others focus on absorptive capacity only within their home country and knowledge, absorptive capacity, and financial outcomes [9]

in one or two sectors, limiting the results and conclusion. Thus, such studies usually state that analysis of the international area is possible in future research. The dataset and its application to scientific articles extend the theory of technology and knowledge.

The primary data for the research are as follows: the raw list of targeted companies that are either subsidiaries, joint companies, Lithuanian-Nordic, Estonian-Nordic capital companies, or companies that are in close collaboration with the Nordic countries. In this case, close partnership means that Lithuanian or Estonian capital companies are in the network for joint projects with Nordic companies, research centres, hubs, or universities. InvestLithuania has provided the list of targeted companies operating in Lithuania, while InvestEstonia has prepared a list of targeted operating companies in Estonia. Investment promotion agencies InvestLithuania and InvestEstonia have been chosen as reliable data sources, as both are responsible for promoting FDI, creating a positive image of the country, providing information about the business environment, and informing, connecting, and supporting foreign capital companies. The preliminary list of the companies that operate in Estonia consists of 2405 companies. However, some companies no longer exist; thus, the list has been reduced to 641 companies after filtering. In the Lithuanian case, the list contains 466. It did not require filtering, as InvestLithuania has provided the list of operating targeted companies that fully satisfied our definition of the targeted operating company. Both agencies sent a list of the companies in spreadsheet format. The data provided the following required information: home country of the company, title of the company, registration code, business sector, average salary, turnover, number of employees, company's age, address, website, email, contact phone and the name of the head of the company. The construct for the survey was prepared based on previous similar studies [10–13].

The article analyzes the factors that determine innovation development and their interlinkages while technology is transferred from Nordic parenting companies to the subsidiaries. The dataset aims to provide information on external and internal factors that determine the innovativeness of the companies, including their results of developing innovation, age, and size. The dataset for further research might be interesting to researchers focusing on absorptive capacity problems and interlinkages between internationalization and absorptive capacity (especially focusing on the benefits of know-how to transfer through FDI). Furthermore, the dataset provides data on the obstacles to innovation. The dataset is the outcome of the project "The Economic Integration of The Nordic-Baltic Region through Labour, Innovation, Investments and Trade" (LIFT), founded by Iceland, Liechtenstein, and Norway through the EEA Grants.

2. Data Description

The data are provided in spreadsheet form. The information is classified and coded based on the construct for the research (the questionnaire) and was adapted for computer-assisted telephone interviewing (CATI). The dataset contains all complete responses to the survey conducted from 10 November 2021 to 5 January 2022 in Lithuania and Estonia. A complete list of respondents included information about 1107 companies. A total of 158 answers were collected, which accounted for 14.27%, similar to previous studies in this area [12,14,15]. Due to the narrow-targeted group of companies and to increase the generalization of the findings, the sample was not limited to industry sectors, age, and company size. In addition, studies show that a company's size and age might impact knowledge transfer and adoption, leading to the development of innovations [14,15].

2.1. The Questionnaire and Its Structure

The structure of the questionnaire was based on the previous studies [9,13,15–18] and for the research, it was adapted for CATI. The telephone interview started with the interviewer's introduction and a short description of the survey, its goal, the organization conducting the survey, and the purpose for further use of the collected data.

The first part was devoted to determining whether a partnership between the targeted companies and Northern European countries exists. This short part assisted in identifying

the type of collaboration (trade, FDI, R&D, training, product development, outsourcing). The third question indicates the origin of capital of their partner company. The fourth question is devoted to determining the partner's type based on its status/main activities (local private company, university, research centre, university, cluster, technology centre, laboratory, or other public institution). If the respondent answered the first question NO, the interview was finished.

The second part ("Assessment of current situation") included ten questions. The first question in this section, question number 5, identifies whether the company has experienced any innovation within the last five years. To answer, the companies had two options, YES and NO. If the company answered NO, the interviewer skipped questions 6, 7, 8, and 9. Question number 6 identifies whether a company is an innovator or an imitator. The 14 h defines the absorptive capacity of a company.

2.1.1. Investing in Innovations and Innovative Products

The 7th question is supposed to describe the tendency to invest in specific kinds of innovations. Thus, this information would assist in understanding the demand and willingness to invest in a particular type of innovation. This information even allows us to realize the meaning of innovation for the companies operating in Estonia and Lithuania. Scientific literature often emphasizes [16,17] that knowledge and technology transfer result in technical innovation. However, the implementation of technological innovation has an impact on organizational or managerial innovation. Some scientists [13] state that administrative, executive or marketing innovations should be introduced before technical ones. However, there is a disagreement among the scientists [15,17,18] on what kind of innovations should be defined as technological and non-technological. Meanwhile, our research focuses on various innovations, including product development, improved manufacturing processes, strategies, and performance [17,19], and even social innovations [18,20]. Based on the scientific literature [9,18,21,22], the survey included the following innovations introduced within the last five years:

- Improved product (service) quality;
- The product (service) performs additional functions;
- Additional services related to an existing product or service are provided;
- An improved, upgraded product or service;
- Improved product manufacturing process;
- Improved product distribution process;
- Implemented/improved organizational management;
- New packaging created;
- New product promotion strategy or tools developed;
- Social innovations.

Thus, question 7 provides the respondents with a block of 10 options to choose what innovations the company has recently implemented or is in the process of implementation. The respondents could choose more than one option.

2.1.2. Investment in Social Innovations

Question 8 determines if the company has implemented any social innovations or systemic changes that affect people, society, or nature. If the respondent answered NO, the interviewer skipped question 9. If the respondent answer YES, the interviewer continued to question 9, which is dedicated to social innovations. Specifically, the question focuses on what kind of problems business companies notice in the society where they might contribute. Furthermore, this block of questions demonstrates their willingness to invest in social innovations. Social innovations have become one of the current topics in innovation theory [23–26], as they gained significance in solving social problems in a society without assistance from governmental institutions. Social innovations solve economic, social, or environmental problems, or even all of them together. Various studies focus on the different types of social innovations and provide multiple directions [27,28], for example,

implementing circular economy practices [24,29,30], analyzing interlinkages between social innovations and social entrepreneurship [27], inequality, power relations [31] and/or environmental degradation [25], promote rural development and solve poverty problems [26], corporate social responsibility [32] and energy transition [33]. Thus, considering that social innovations include a variety of possible outcomes, we developed the following list:

- Integration of older people into the labour market;
- Poverty reduction;
- Increasing youth employment;
- Integration of disabled people into the labour market;
- Development of green business;
- Lifelong learning;
- Access to health services;
- Promoting a healthy lifestyle;
- Promoting social partnerships;
- Reduction in energy consumption;
- Reduction in water consumption;
- Reduction in CO_2 gas;
- Other measures to mitigate climate change.

Thus, the respondent had block of thirteen options and an additional open one. They could choose more than one option.

The 10th question identified whether the company implemented (adhered to) the principles of social responsibility. The respondent may choose either YES or NO.

2.1.3. Benefits of Innovations

The 11th question identifies the ways in which the company benefited from the implemented innovations. Recent studies [32,34] focus on knowledge acquisition from external sources, i.e., domestic and international knowledge sources. Their findings proved that both sources positively affect the companies' innovative performance. Studies demonstrate that companies expect that innovations lead to optimized processes [19], increased productivity and efficiency [24], improved products or newly developed products [35], staff development [17], and even stimulated supply and demand and improved or even started R&D in the company [22]. The construct is based on studies that emphasize innovations' different benefits [27]. Thus, we developed the company's list of benefits after implementing innovations or improvements. We focus on both technological and managerial organizational innovations to compile the following list:

- Increased efficiency and productivity;
- Optimized processes;
- Indirectly stimulated the supply of goods;
- Indirectly stimulated the demand for goods;
- New technologies drive further innovation;
- Staff development;
- Meeting the increased needs of consumers;
- Product or service improvement;
- Improved organizational management;
- New products or patents developed;
- Carrying out research in the company.

Thus, the 11th question included 11 items that determine the usefulness of new technologies or knowledge transfer or dissemination in a company. For evaluation, Likert's scale from 1 to 5 was used, where 1 meant not essential and 5 very important.

2.1.4. External Factors Determining Knowledge Transfer and Development of Innovations

Although businesses understand the need and benefits of introduced innovations, companies face challenges, uncertainties, or obstacles to developing and introducing

innovations. Even if the company has opportunities to acquire and absorb knowledge from a foreign partner, it may be unsuccessful due to some difficulties [16]. However, different obstacles prevent innovations (deterrent obstacles) or influence the intensity of investment in innovation (revealed obstacles) [36]. The other source identifies economic, social, and other barriers [37]. For example, deterrent obstacles refer to the high cost of innovation development, the lack of foreign direct investment or support from the state, or even demand barriers [36,38,39].

Meanwhile, revealed obstacles reduce investment in innovations due to difficulties in finding high-educated staff, such as young researchers, or low intensity of collaboration between business and research institutions, hubs, and universities [17]. Other studies prove that even cultural dissimilarities between knowledge transferring and receiving companies cause issues. In addition, some studies also emphasize that geographical distance between companies might be challenging when implementing innovation. In our research, we analyze the following external factors that may discourage innovations:

- Business investment in research;
- Foreign investments;
- The potential of intellectual capital;
- Lack of young researchers;
- High technology export or import;
- Competences of a foreign partner in the development of innovations;
- State support for cluster development;
- State financial support for the transfer/assimilation of new technologies or knowledge;
- Cooperation between research institutions and business;
- Cultural and historical similarities between the host and the transferring countries;
- The geographical distance between technology and knowledge transfer and the host company.

The next question assesses the importance of external factors in transferring technology and knowledge to partner companies; for evaluation, Likert's scale (1 to 5 were used, where 1 meant not important and 5 very important) was also used. The 13th question determined the percentage of staff holding at least a bachelor's degree. The respondent had to choose from six options, where ranges were provided.

2.1.5. Absorptive Capacity

However, difficulties in developing innovation might not be the issue of external factors but rather internal ones. The company itself should be able to acquire and assimilate knowledge and transform it into innovation or improvements. Thus, studies confirm [10,12,40] that companies have different abilities to acquire, assimilate, and change knowledge. In other words, absorbing knowledge and technologies are based on various processes. Thus, a firm's ability to recognize the value of new information, assimilate it, and apply it to commercial ends is defined as absorptive capacity. The earliest studies included more monetary factors, such as investments in R&D [41,42], sales from R&D [14], expenses on R&D [43,44], or costs of training for R&D personnel [45,46]. Meanwhile, the other studies introduced different ratios, such as R&D intensity [10], R&D and non-R&D activities [45], number of patents [47], innovation rate [14], and number of employees with a graduate degree [45]. However, problems may occur with the conceptualization, since it involves intangible assets. Additionally, there is a disagreement in categorizing the factors involved into different processes. Thus, the most recent studies use multidimensional aspects, and use second-order constructs. Researchers usually choose from 10 to 18 items that describe absorptive capacity [13,48,49]. Thus, recent studies use multidimensional factors and a second-order construct [48,49] for measurement studies, using Likert's scale from 1 to 5. In our case, we used a second-order construct including the following 13 items that describe all 4 processes (acquisition, assimilation, transformation, and exploitation):

- Higher technological education;
- Higher education in management or economics;

- The number of employees holding master's or Ph.D. degrees;
- Individual ability to find, select and quickly absorb new information;
- Communication within the business sector;
- Understanding customer's needs;
- Learning skills;
- Competences to adopt newly obtained knowledge;
- Belonging to clusters;
- Diversity of competences;
- Sending employees to the business exhibitions;
- Existing knowledge and information gathering technologies;
- Company's investment in employee training.

Furthermore, this classification supports two-dimension classification, i.e., potential and realized absorptive capacity.

The goal of the 14th question is to define absorptive capacity in a company. Potential and realized absorptive capacity are based on the four dimensions included in the absorptive capacity construct, acquisition, assimilation, transformation, and exploitation. The resulting scale is composed of 13 items. A five-point Likert's scale was used for the evaluation, where 1 meant not essential and 5 meant very important.

2.1.6. Transferring from Linear to Circular Economy

Innovative companies more often transfer from linear to circular economy business models. Even social initiatives target reducing waste and greenhouse emissions, optimizing using raw materials, or using recycled ones [33,39,50]. Thus, our research focuses on assessing the essential factors of international collaboration and knowledge transfer when the company transitions from a linear to a circular economy. The list of essential factors is developed in line with "A new Circular Economy Action Plan For a cleaner and more competitive Europe" [51]. We included the following nine determinants of transferring from a linear to a circular economy:

- Use of renewable energy sources, biological or potentially recyclable materials;
- Extending the use of the product by repair, refurbishment, and resale;
- Participation in knowledge dissemination networks;
- Technological innovation through digitization;
- Advising on the application of new knowledge in digital technology management;
- Exchange of knowledge and good practice;
- Development of new production processes;
- Use of secondary raw materials;
- Application of reverse logistics.

To evaluate the important factors of the 15th block of questions, the 5 point Likert's scale was used. The last questions describe the companies that agreed to participate in the questionnaire.

Question number 15 provided a list of factors (9 items) that might be important for collaboration and knowledge transfer. However, the respondents were asked to evaluate the importance each of them in the context of transition from a linear to circular economy. The same five-point Likert's scale was used.

The third part of the questionnaire is devoted to collecting data on the company. It includes five questions. Question number 16 asks the origin of the company's capital. Respondents had to choose one option out of eleven. The next question determines the business sector the targeted company was operating in. The 18th question is an open question and asks the number of employees in the company. Question number 19 was also an open question devoted to identifying the company's age. The 20th question identifies the respondent's name, surname, phone number, and company. Respondents were asked if they agreed to provide data if researchers wanted to contact them for further study. Thus, the collected data for the 20th question are not provided. (Table 1).

Table 1. Description of the data contained in the datasets, distinguishing between fields appearing in the datasets.

Part	Question No.	Question Type	Field ID	Data Type
I	-	Metadata	ID	Integer
	1	Single choice option	Q1	String/Boolean (Yes/No)
	2	Multiple choice + other	Q2_1, Q2_2, Q2_3, Q2_4, Q2_5, Q2_6, Q2_7, Q2_7_O	String/Boolean (Yes/No)
	3	Single choice option + other + I do not know	Q3_1_1, Q3_1_2, Q3_1_98, Q3_1_99, Q3_2_1, Q3_2_2, Q3_2_98, Q3_2_99, Q3_3_1, Q3_3_2, Q3_3_98, Q3_3_99, Q3_4_1, Q3_4_2, Q3_4_98, Q3_4_99; Q3_5_1, Q3_5_2, Q3_5_98, Q3_5_99; Q3_6_1, Q3_6_2, Q3_6_98, Q3_6_99; Q3_7_1, Q3_7_2, Q3_7_98, Q3_7_99	String/Boolean (Yes/No)
	4	Multiple choice option + other	Q4_1, Q4_2, Q4_3, Q4_4, Q4_5, Q4_6, Q4_7, Q4_8, Q4_9_O;	String/Boolean (Yes/No)
II	5	Single choice option + implementing + I do not know	Q5_1, Q5_2, Q5_98, Q5_99	String/Boolean (Yes/No)
	6	Single choice option + I do not know	Q6_1, Q6_2, Q6_98	String/Boolean (Yes/No)
	7	Multiple choice option + other	Q7_1, Q7_2, Q7_3, Q7_4, Q7_5, Q7_6, Q7_7, Q7_8, Q7_98	String/Boolean (Yes/No)
	8	Single choice option + implementing + I do not know	Q8_1, Q8_2, Q8_98, Q8_99	String/Boolean (Yes/No)
	9	Multiple choice option + other	Q9_1, Q9_2, Q9_3, Q9_4, Q9_5, Q9_6, Q9_7, Q9_8, Q9_9, Q9_10, Q9_11, Q9_12, Q9_13, Q9_98, Q9_98_O	String/Boolean (Yes/No)
	10	Single choice option	Q10	String/Boolean (Yes/No)
	11	Single choice option	Q11_1, Q11_2, Q11_3, Q11_4, Q11_5, Q11_6, Q11_7, Q11_8, Q11_9, Q11_10, Q11_11	Likert's scale (1...5)
	12	Single choice option	Q12_1, Q12_2, Q12_3, Q12_4, Q12_5, Q12_6, Q12_7, Q12_8, Q12_9, Q12_10, Q12_11	Likert's scale (1...5)
	13	Single choice option	Q13	Integer (%)
	14	Single choice option	Q14_1, Q14_2, Q14_3, Q14_4, Q14_5, Q14_6, Q14_7, Q14_8, Q14_9, Q14_10, Q14_11, Q14_12, Q14_13	Likert's scale (1...5)
	15	Single2 choice option	Q15_1, Q15_2, Q15_3, Q15_4, Q15_5, Q15_6, Q15_7, Q15_8, Q15_9	Likert's scale (1...5)
III	16	Single choice option + other	Q16, Q16_98_O	String (defined items)
	17	Single choice option + other	Q17, Q17_98_O	String (defined items)
	18	Value input	Q18	Integer
	19	Value input	Q19	Integer
	20	Text input	Q20_1, Q20_2, Q20_3	Free text

Field ID ending with O means other option.

2.2. The Characteristics of Surveyed Companies and Their Innovativeness

The raw list of targeted companies mainly consists of Finnish capital companies (40%), followed by Swedish (27%) and Norwegian (19%) capital companies in Estonia and Lithuania. The lowest number of companies originated from Iceland, and only 1% participated in the survey according to the origins of capital being distributed slightly differently. A total of 23% of the companies originated from Norway, 22% from Finland, and 18% from Sweden. Joint ventures of domestic (Lithuanian or Estonian) and Nordic capital companies made up 15% of all surveyed companies. In the scientific literature, there is no consensus on interlinkages between the size [52], age [53], and innovativeness of a company [12]. Thus, the companies that employ at least five people have been included in the list. Tiny, small, and medium-size companies made up 90% of all companies. Large companies make up only 10% (Table 2). The average age of the companies that have participated in the survey is 16.6 years, which varies from 3 to 32 years. Seventy-six companies are involved in manufacturing sector, which makes up almost half of all the companies. A quarter of the companies are in engineering design, services, consulting IT and telecommunication, logistics, and transportation. The lowest number of companies are in agriculture and mining. Over the last two years, the average turnover of the companies that participated in the survey was 12.5 mil euros. A total of 29.1 percent of all companies described themselves as innovators and the others (70.9 percent) described themselves as imitators.

Table 2. The characteristics of the companies.

Attribute		Number	%
Country of capital origins	Denmark	21	13
	Finland	35	22
	Iceland	1	1
	Norway	36	23
	Sweden	29	18
	Estonia	8	5
	Lithuania	4	3
	The joint venture of domestic capital and Nordic capital	24	15
Size	Tiny company	41	26
	Small company	61	38
	Medium size company	41	26
	Large company	16	10
Business sector	Agriculture	3	2
	Business consulting	10	6
	Commercial activities	14	9
	Construction and real estate	5	3
	Engineering design, services, and consultation	13	8
	Pharmaceuticals	4	3
	Financial sector	5	3
	IT and telecommunication	12	8
	Logistics and transportation	13	8
	Manufacturing	76	48
	Mining	1	1
	Other services	2	1

A total of 62.2 percent of the companies claim that they have invested in the development of innovation in the last five years. Thus, the respondents had to choose from ten types of innovations. All ten types of innovation have been introduced by 6.1 percent of the companies that have invested in innovation within the last five years. A total of 17.2 percent of the companies have implemented two types of innovation, and the same number of companies have developed three. Eighteen percent have implemented four types of innovation. Five types of innovations have been introduced by 8.1 percent. A total of 10.1 percent invested in six types of innovations. In addition, 9.1 percent, 4 percent, and

4 percent of the companies introduced seven, eight, and nine types of innovations, respectively. The histogram of the frequency of innovation is provided in Figure 2. Descripted statistics is provided in the Table 3.

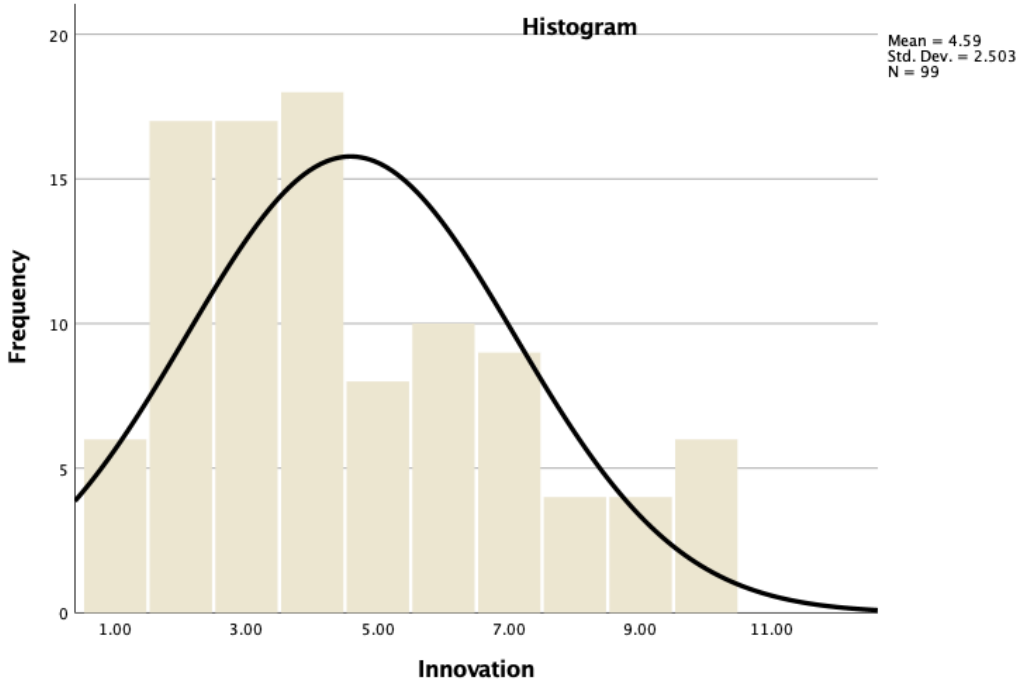


Figure 2. Histogram of frequency of implemented total innovations.

Table 3. Descriptive statistics of various types of innovations, including total innovations.

	Mean	Std.E	Std.Dev.	Variance	Skewness	Kurtosis	Min	Max
Total innovations	4.5849	0.251	2.503	6.266	0.643	−0.489	1	10
Improved products quality	0.462	0.039	0.500	0.250	0.154	−2	0	1
Additional functions of the product	0.284	0.036	0.459	0.205	0.963	−1.08	0	1
Additional services related to an existing product or service	0.297	0.036	0.458	0.210	0.895	−1.215	0	1
Improved, upgraded product or service	0.392	0.039	0.489	0.240	0.445	−1.825	0	1
The improved product manufacturing process	0.342	0.038	0.476	0.226	0.674	−1.566	0	1
The improved product distribution process	0.177	0.03	0.383	0.147	1.707	0.925	0	1
Improved organizational management	0.266	0.035	0.443	0.196	1.070	−0.865	0	1
New packaging created	0.139	0.027	0.347	0.121	2.104	2.458	0	1
New product promotion strategy or tools developed	0.132	0.027	0.340	0.161	2.183	2.803	0	1
Social innovations	0.379	0.387	0.486	0.237	0.5	−1.772	0	1

Most companies have invested in three types of innovation, including improving the quality of the product (46.2%) or improving and upgrading existing products or services (39.1%), and introducing social innovations (38%). The lowest number of companies have created new product promotion strategies (13.3%), followed by organizational management (13.9%) and improved product distribution process (17.7%). Meanwhile, 34.2 percent invested in the improvement of their product's manufacturing process. The others focused on introducing additional functions of the product (28.5%) or services related to the product (29.7).

The data's descriptive statistics identify the targeted companies' uniqueness and typology. Additionally, the tendency to implement innovations has been determined in the context of knowledge transfer from Nordic countries to Estonia and Lithuania.

Unfortunately, the research indicates that 37.8 percent of the companies have not invested in innovations within the last five years.

3. Methods and Methodology

The research process has been quite complicated, as it addressed several research questions. Thus, at first, we focused on the development of the construct. Furthermore, the research construct was supposed to be adopted for the chosen data collection type. In this case, the computer-assisted telephone interviewing (CATI) method was used. As the time for the telephone interview was limited (15 min), we had to shorten the questionnaire so we would not lose any valuable information. The second challenge we faced involved the list of targeted companies and reliable contact information. Thus, we asked for assistant investment promotion agencies in Estonia and Lithuania.

Furthermore, after obtaining the data, validity, and reliability were estimated. The next step of data processing was principal component analysis. The final step was correlation and regression of the chosen variables.

3.1. Data Collection Method

The computer-assisted telephone interviewing method was applied to collect the data. For the interviewers, the questionnaire was provided as a guide displayed on the screen of their computers. Pre-coded responses were shown on the screen. Thus, the interviewers entered the reactions using a mouse and keyboard that corresponded to each given ID. The CATI software deals with any complex survey or questionnaire. In addition, CATI can manage samples, which means that it schedules and allocates telephone numbers to individuals or groups of interviews assigned to a particular project. In this way, interviewers avoid mistakes and do not lose potential respondents.

Moreover, CATI handles quota management, ensuring that the planned number of fully completed interviews with the targeted group is met. In our case, at least 10% of the targeted group of companies was required, as it is a very narrow and specific group. Scheduling interview appointments and monitoring response rates are essential in such studies, as they strongly affect the quality of a call. In addition, CATI research as a method was chosen as its advantages are distinguished, demonstrated by the following list:

1. The process is quick as the interviewer is given a questionnaire and requited instruction. Thus, they might focus more on the interviews.
2. The interviewer enters the data into the structured survey. Thus, in this way, time for additional data processing is eliminated and the number of errors reduced.
3. The interview process is even faster as the data are entered and collected.
4. As the process continues, it is possible to provide results within live dashboards. In some projects, it is essential for the analysis while the data are in the collection process.

Most modern CATI platforms even allow mixed-mode methodologies, combining online surveys and telephone interviews. Employing several data collection methods simultaneously increases the possibility of collecting more responses or reaching the projected number of completed interviews much quicker [52]. In our case, the telephone interview time was set to 15 min.

The targeted vital respondents were Chief Executive Officers (CEOs). The CEOs were chosen due to their knowledge of all collaboration and research processes in the company [13]. The survey's language is English, as most respondents were foreigners and English speakers.

From the CATI platform, the dataset was exported to a spreadsheet file ending in .xlsx. The spreadsheet has three sheets. The first sheet contains all coded questions with verbal answers. The second sheet provides transformed data from verbal to quantitative expression. For the question with two options YES and NO, yes is converted to 1, no to 0, for the questions with Likert's scale integer expression from 1 to 5. The 6th question asked if the company is an innovator or an imitator. Thus, for an innovator, the numerical expression is 1; for an imitator is 2. The first and second sheet contains data in 158 rows and

28 columns. The last three columns held the company's title, the contact person's name, and their mobile number. These three columns have been removed from the published dataset for ethical reasons. Thus, the data were anonymized. The third sheet contains coding data and questions.

3.2. Evaluation of Validity and Reliability and Principal Component Analysis

SPSS Statistics 27 was used to estimate the validity and reliability and perform principal component analysis. Furthermore, reliability measures the internal consistency of the scale and clarifies whether the concept has been measured precisely without any possible errors. The more excellent the reliability is, the lower the errors are and the more accurate the instrument for measurement is [46,47]. To measure reliability, Cronbach's Alpha was estimated. Cronbach's Alpha evaluates strictness with the confirmation of what might occur if one of the items is eliminated. In this way, Cronbach's Alpha confirms or denies the existence of the property of parsimonious parametrization, which shows if the scale contains a small number of items that provides suitable information. If Cronbach's Alpha is closer to 1, it means that internal consistency is greater. The minimum value of Cronbach's Alpha is supposed to be at least 0.6 [46,47].

Furthermore, the Kaiser–Meyer–Olkin measure of sampling adequacy test (KMO) and Bartlett's test of sphericity were estimated to check if the data were suitable for structure detection. The KMO indicates the proportion of variance in variables that underlying components might cause. High values closer to 1 mean that PCA analysis might be used for these data. A value lower than 0.5 shows that PCA is not an appropriate tool to apply [54].

Principal component analysis is a method used to reduce the dimensionality of large datasets by transforming an extensive collection of variables into smaller ones. After rotation and transformation, the data still consist of information in a vast array. Principal components are new variables that are created as the mixtures of the initial variables or linear combinations. These combinations are transformed into uncorrelated variables (i.e., principal components). Thus, most of the information within the initial variables is extracted into the first components. The new variables themselves often have no quantitative measure. PCA analysis aims to carry out the following objectives [55]:

- Reduce a large number of variables by moving to a lower common component number;
- Validate the used scale by showing that the components of the scale fall into the same component and, at the same time, eliminate those components that fall into several factors;
- Create orthogonal (mutually uncorrelated) components that can be used in regression analysis, avoiding the problem of multicollinearity of variables.

The principal components analysis covers the following six stages: standardization, calculation of covariance matrix for the features in the dataset, estimation of the eigenvalues and eigenvectors for the covariance matrix, extraction of components and determination of the number of components; rotation and interpretation of components and estimation of component values. Rotation is based on varimax with Kaiser normalization. Screen plots might be used for visualization. For estimating linkages between the constructs, correlation analysis was applied.

4. Results

4.1. Validity and Reliability of Data

Cronbach's Alpha was estimated for the questions with several answer options or Likert's scale, which proved that all questions provide relevant information (Table 4). The reliability results show that the concept has been measured precisely without errors. The higher the value of Cronbach's Alpha, the better the reliability [56]. In all estimated questions, Cronbach's Alpha is above 0.6, and the data are suitable for further research.

Table 4. Reliability statistics.

Block of Questions	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
7th block (innovative products)	0.854	0.858	9
9th block (social innovations)	0.922	0.913	13
11th block (benefits of innovations)	0.781	0.718	11
12th block (external factors)	0.838	0.838	11
14th block (absorptive capacity)	0.760	0.783	13
15th block (transfer from linear to the circular economy)	0.807	0.809	9

Principal component analysis (PCA) was applied for the chosen question blocks that provide information on the factors that determine particular problems. To employ principal component analysis, it is necessary to check whether the data are suitable for structure detection [34]. Thus, the Kaiser–Meyer–Olkin measure of sampling adequacy test (KMO) and Bartlett's test of sphericity were estimated for the following blocks of questions: 11, 12, 14, and 15. It was indicated that for the 11th block of questions, KMO = 0.740, Bartlett's test of Sphericity $\chi^2 = 456.7$, df = 55 and $p < 0.001$. Thus, the data are suitable for PCA. For the next block of questions dedicated to determining the external that factors influence knowledge transfer, the KMO test (KMO = 0.842) and Bartlett's test of Sphericity ($\chi^2 = 542.9$, df = 55, $p < 0.001$) show the suitability for PCA. The KMO test (KMO = 0.775) and Bartlett's test of sphericity ($\chi^2 = 455.2$, df = 78, $p < 0.001$) prove the suitability of principle component analysis of the 14th block of questions that indicate the factors determining absorptive capacity in a company. The KMO test (KMO = 0.808) and Bartlett's test of sphericity ($\chi^2 = 404.8$, df = 36, $p < 0.001$) for the last block of questions demonstrate appropriateness for PCA.

4.2. Results of Principle Component Analysis

Principle component analysis, as a background for EFA, reduces the number of variables. We assume that the most significant variables are supposed to be explained by the component in which the eigenvalue is more significant than one. The first component is the most general component in which most items load and present the most significant amount of variance. In the case of essential factors for implementing innovation, there is no correlation among the variables; thus, PCA might be applied. In this case, the first component explains 32.19% of the total variance, while the second and third explain 12.8% and 10.6%, respectively. The remaining eight components explain the remaining 45% of variance. The first component includes four variables ("new technologies drive further innovation" (Q11_5), "product or service improvement" (Q11_8), and "new products or patents developed" (Q11_10); and "carrying out research in the company" (Q11_11), with the following vector loadings of variables: 0.617, 0.673, 0.736 and 0.713. Two of the most important variables ("indirectly stimulated the supply of goods" (Q11_3) and "indirectly stimulated the demand of goods" (Q11_4)) are in the second component, with the vector loadings 0.918 and 0.850. The third component is covered by three remaining variables ("increased efficiency and productivity" (Q11_1), "optimized processes" (Q11_2), and "staff development" (Q11_6)), with the vector loadings of the variables as follows: 0.549, 0.761, and 0.729. The results of PCA analysis are the set of unit vectors that make up the transformation matrix (Table 5).

Table 5. Component transformation matrix of 11th block of questions.

Component	1	2	3
1	0.659	0.587	0.470
2	0.535	−0.806	0.255
3	−0.528	−0.083	0.845

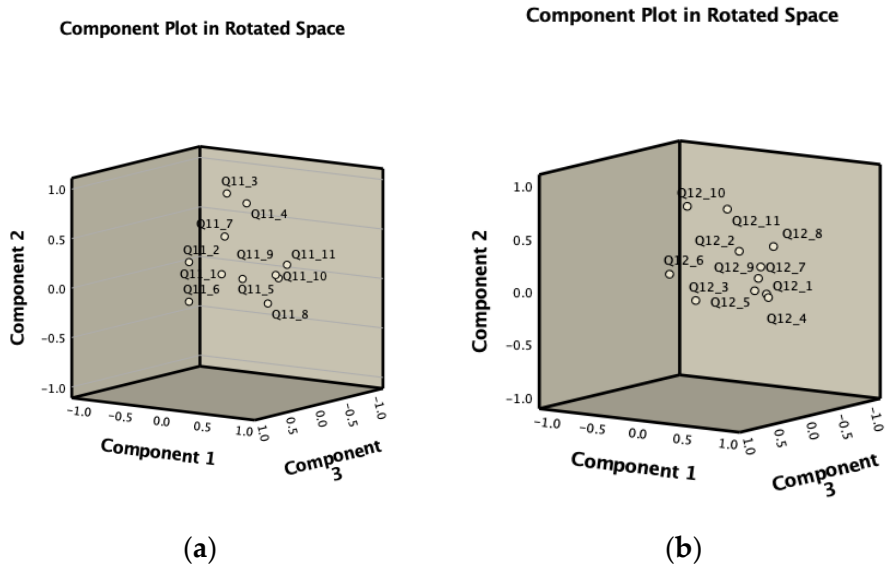
The most significant correlation in the first component is between the component and the variable "new products or patents developed". The second component has very high correlation with both variables. However, a stronger correlation exists between the second component and "indirectly stimulated the supply of goods". The third component has a moderate, strong correlation with all variables. However, the strongest correlation between the component and "increased efficiency and productivity" is estimated.

In the case of the external factor that determines knowledge and technology transfer, the first component explains 39.15% of the total variance, the second and third 11.67%, and 9.38%, respectively, which, in total, explains more than 60% of all loading. The first component includes six variables out of eleven ("business investment in research" (Q12_1), "lack of young researchers" (Q12_4), "high technology export and/or import" (Q12_5), "state support for cluster development" (Q12_7), "state financial support for the transfer or assimilation of new technologies or knowledge" (Q12_8), and "cooperation between research institutions and business" (Q12_9), which produced the following vector loadings of variables: 0.804, 0.696, 0.658, 0.693, 0.638, and 0.714. The second component contains two variables ("cultural and historical similarities between the host and the transferring countries" (Q12_10) and "geographical distance between technology and knowledge transfer and host company" (Q12_11)), with the vector loadings of 0.796 and 0.758, respectively. The two remaining variables ("geographical distance between technology and knowledge transfer and host company" (Q12_3) and "competencies of a foreign partner in the development of innovations" (Q12_6)) are involved, the third component representing importance by the vector loadings of 0.771 and 0.822 (Table 6).

Table 6. Component transformation matrix of 12th block of questions.

Component	1	2	3
1	0.826	0.396	0.401
2	−0.495	0.850	0.180
3	−0.270	−0.347	0.898

Furthermore, Figure 3 demonstrates that the hypotenuse of the right triangle is the projection of the original coordinates and becomes the new X coordinate. There is no y' component, so its value is zero.



(**a**) (**b**)

Figure 3. Component plot in rotated space: (**a**) important factors for implementing innovation (11th block of the question); (**b**) external factors for determining the implementation of innovations (12th block of questions).

In summary, it might be concluded that the correlation between the first component and individual variable varies from moderately positive to a high positive correlation. The greatest positive correlation is between the first component and the "lack of young researchers". The second component has a high positive correlation with both variables. A high positive correlation has been estimated between the third component and both variables.

In the case of the factors that determine absorptive capacity (14th block of questions), four components explain more than 59% of the total variance. All the variables were extracted in four components, as absorptive capacity is based on four processes. The first component explains more than 29% of the total variance; the other explains 13.37%, and the third and the fourth 9.19% and 8%, respectively. The rotated component matrix by varimax with Kaiser normalization revealed that five variables with a vector loading of more than 0.5 lay in the first component. The variables "learning skills" (Q14_9), "collective competence to adapt and adopt innovations" (Q14_10), "diversity of competencies" (Q14_11), "the existence of knowledge and information gathering technologies" (Q14_12) and "company's investment in employee training" (Q14_13) produced the following vector loadings of variables: 0.596, 0.687, 0.634, 0.676 and 0.725. The second component involved three variables ("higher technological education" (Q14_1), "higher education in economics and management (Q14_2), and "number of employees with a master's or doctoral degree" (Q14_3)), with the vector loadings of 0.797, 0.736, 0.753. The third component involved "individual ability of employees to find, select and absorb relevant information" (Q14_4), "communication within the business sector" (Q14_5), "understanding consumer needs" (Q14_6), with produced loadings 0.776, 0.701, 0.665. Two variables ("belonging to business clusters" (Q14_7) and "participating into exhibitions, events" (Q14_8)), with the vector loadings 0.636 and 0.857, were revealed in the fourth component. The results of the transformation matrix are provided in Table 7.

Table 7. Component transformation matrix of 14th block of questions.

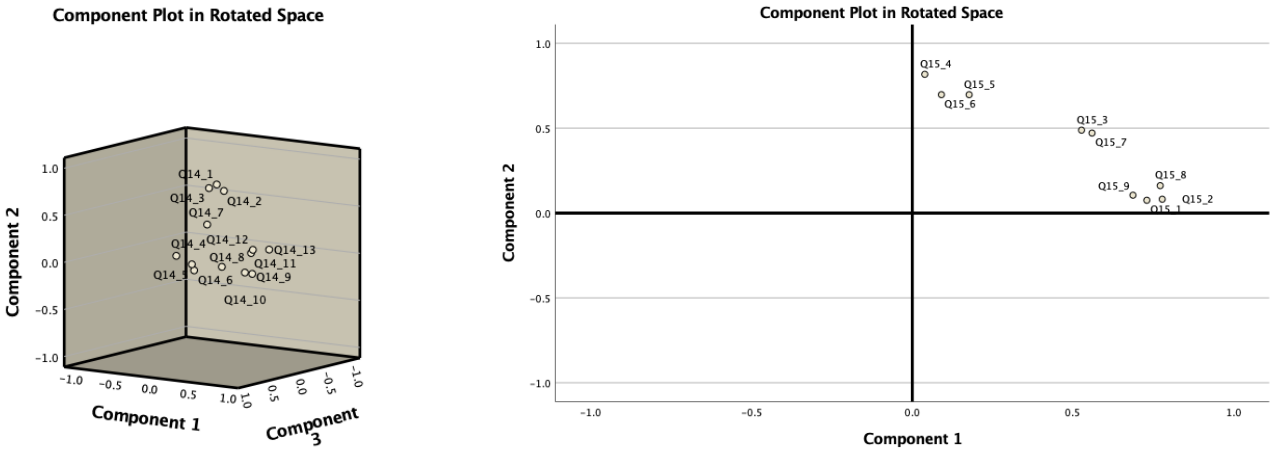
Component	1	2	3	4
1	0.692	0.384	0.519	0.322
2	−0.332	0.903	−0.265	0.065
3	−0.251	−0.192	−0.109	0.943
4	−0.590	0.024	0.805	−0.059

The results showed the strongest positive correlation between the first component and the variable "company's investment in employee training". The variable "higher technological education" among the other variables has very high positive correlation with the second component. Meanwhile, a strong positive correlation exists between the third component and the "individual ability of employees to find, select and absorb relevant information". Furthermore, a high correlation between the fourth component and "participating in exhibitions, events" is estimated.

Principle component analysis of the last block of questions was devoted to analyzing the factors that determine the transfer from a linear to a circular economy and disclosed that there are two components that explain 55.4% of the total variance. The first component includes six variables, with a vector loading of more than 0.5. These variables are "use of renewable energy sources" (Q15_1), "extending the use of the product by repair, refurbishment, and resale" (Q15_2), "participation in knowledge dissemination networks" (Q15_3), "development of new production processes" (Q15_7), "use of secondary raw materials" (Q15_8), "application of reverse logistics" (Q15_9), with the following estimated vector loadings of the variables: 0.730, 0.778, 0.527, 0.560, 0.772, and 0.687, respectively. The second component has the other three variables "technological innovation through digitization" (Q15_4), "technological innovation through digitization" (Q15_5), and an "exchange of knowledge and good practice" (Q15_6), with estimated loadings of 0.817, 0.697, 0.698. (see Table 8 and Figure 4).

Table 8. Component transformation matrix of 15th block of questions.

Component	1	2
1	0.809	0.587
2	−0.587	0.809



(**a**) (**b**)

Figure 4. Component plot in rotated space: (**a**) factors determining absorptive capacity (14th block of questions); (**b**) factors determining switch from linear to a circular economy (15th block of questions).

The PCA shows that the first component has a moderate or high positive correlation with the individual variables. The strongest correlation exists "between extending the use of the product by repair, refurbishment and resale" and the component. The second component also has a moderate or high positive correlation.

In conclusion, it might be stated that PCA reduced the number of variables into an extracted number of components. Additional loadings were estimated, which shows the correlation between the component and each variable. In addition, a separate row of the component defined a linear composite of the component score that would be the expected value of an associated variable. Although the variables are correlated with the component, the components are uncorrelated, since they are orthogonal to each other in the sample space. Additionally, the higher loading of the variable reveals the greater importance to that component. Based on the PCA, we can state that variables of the construct "benefits of innovations" might be explained by three components named "improvement of products and services", "demand and supply", and "efficiency and productivity". The most significant importance of the first component can be attributed to "new products or patents developed". To the most considerable extent, the second component is affected by the "stimulated supply of goods". "Optimized processes" is the most important variable for the third component. After PCA, the construct "external factors" was reduced to three components. Out of the "business investment in research", "cultural and historical similarities between the host and the transferring countries", and "competencies of a foreign partner in the development of innovations" are the most significant for the component they were assigned. Similar results show that the study concentrated on less developed countries and firms' abilities to identify, absorb, transfer and exploit knowledge. In that case, collaboration between partners in networks, especially between business and research institutions, is extremely important [48]. Variables in the 14th block (absorptive capacity) were reduced to four components with estimated different loadings. The essential variable for the first component is the company's investment in employee training. "Higher technological education" makes the most significant impact on the second component. For the third component, "individual ability" is the most important. However, a study that analyzed a less developed country's absorptive capacity and innovativeness proved that

networking and knowledge acquired from learning from a foreign capital company is more important than individual ability [50].

Meanwhile, the 4th component's most significant impact is the variable "participation in exhibitions". The 15th block of questions (variables) were reduced to two components. Thus, for the first component, the most significant variable is the "use of secondary raw materials". On the other hand, "technological innovation through digitization" makes the most significant impact on the second component, which confirms the results of a study on Brazil's fashion industry [24]. Thus, the produced loading might also be used as a predictor for future research.

4.3. Correlation and Regression

The variable "innovations" is based on the results of the survey's 7th block of questions and refers to innovations implemented within the last five years. Several developed or implemented innovations demonstrate the impact of successfully acquired knowledge, transformation, and exploited it. This variable has been used in previous studies [12–14,34] to indicate innovative productivity. Table 9 presents the results of the correlation between the analyzed variables.

Table 9. Correlation between chosen variables.

Constructs	Mean	Std. Dev.	1	2	3	4	5	6
Innovations	45.859	250.310	1.000					
Absorptive capacity	686.869	772.968	0.016	1.000				
Social innovations	31.818	373.446	0.685 ***	0.069	1.000			
Benefits of innovations	438.586	681.087	0.119 *	0.653 ***	0.119 *	1.000		
External factors	389.091	866.272	0.120 *	0.726 ***	0.049	0.537 ***	1.000	
Transfer from linear to circular economy	357.879	618.799	0.158 **	0.614 ***	0.143 *	0.437 ***	0.595 ***	1.000

The value is significant at * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

The correlation shows that, in our case, the variable "innovations" has a fragile but significant relationship with "benefits of innovations", "external factors", and "transfer from linear to a circular economy". Meanwhile, our case has no correlation between innovations and absorptive capacity. Social innovations and innovations have moderate significant relationships. Moderate and significant correlations exist between absorptive capacity and the three last variables. At the same time, there is no relationship between absorptive capacity and social innovations. A fragile but significant relationship is estimated between social innovations and "benefits of innovations" and transfers from linear to the circular economy. Although, correlation indicates the association between variables. However, statistically, it only means the degree to which a pair of variables are linearly related. Hence, it does not provide information about the causality and impact of the variables on the other. Thus, for further research, additional econometric modelling might be employed.

Only the second model is significant and it explains 65% of the trend (Table 10). The correlation and regression analysis unveiled that there are no interlinkages or weak relationships that exist between innovation and other constructs, except social innovation (Figure 5). On the other hand, some researchers claim [50] that nonlinear relationships exist between innovation and technology transfer.

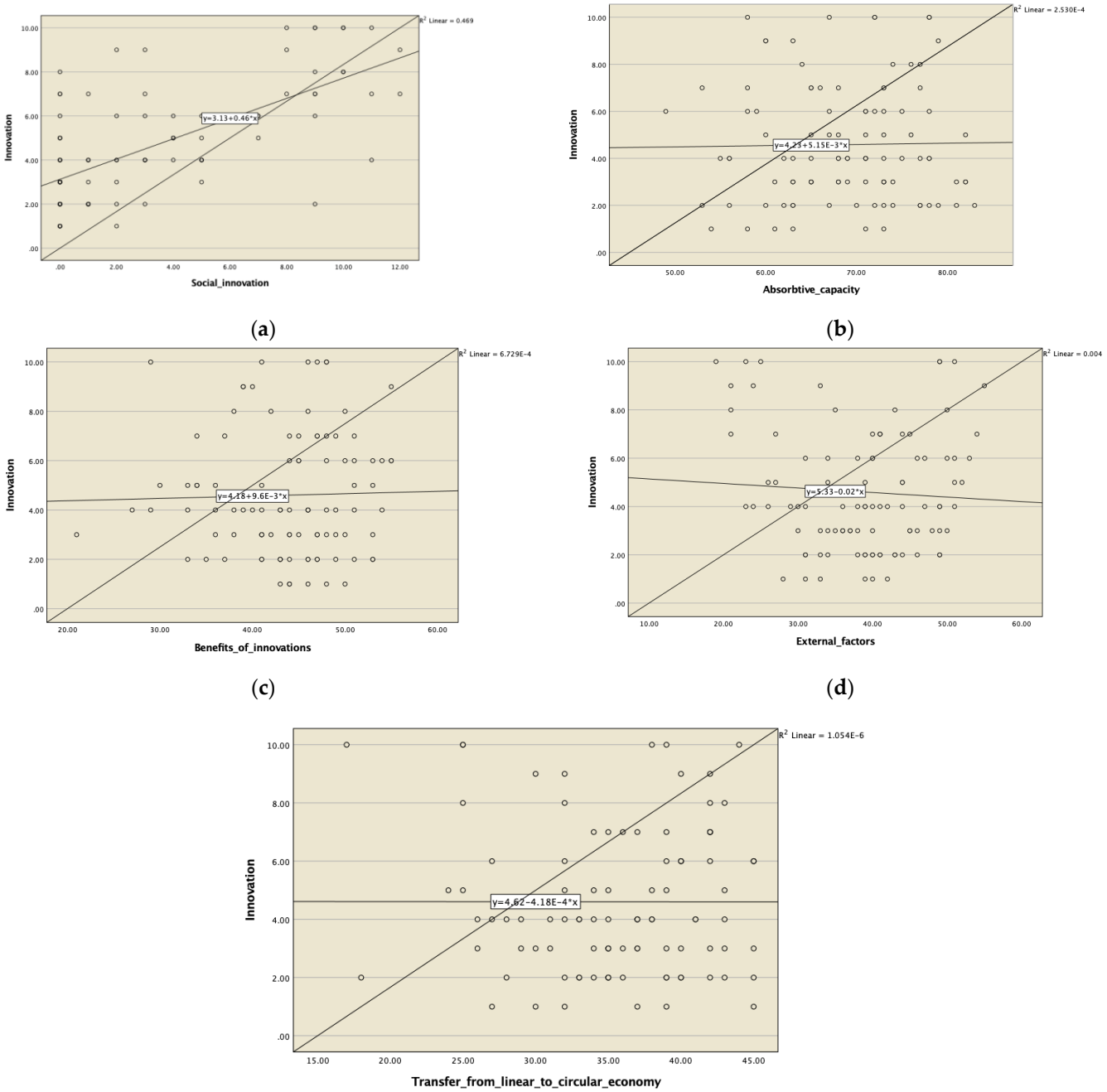


Figure 5. Regression variables plots, when innovation is the dependent variable. (**a**) Regression plot between innovation and social innovation; (**b**) regression plot between innovation and absorptive capacity; (**c**) regression plot between innovation and benefit of innovations; (**d**) regression plot between innovation and external factors; (**e**) regression plot between innovation and transfer from linear to circular economy.

Table 10. Results of linear regression analysis.

	Model 1 Absorptive Capacity	**Model 2 Social Innovations**	**Model 3 Benefits of Innovations**	**Model 4 External Factors**	**Model 5 Transfer from Linear to Circular Economy**
Constant	4.232 (2.272)	3.125 (0.245)	4.182 (1.673)	5.331 (1.170)	4.617 (1.502)
Unstandardized B	0.005 (0.033)	0.456 (0.50)	0.1 (0.038)	−0.19 (0.029)	0 (0.042)
F	0.025	85.72	0.065	0.47	0
R	0.016	0.685	0.026	0.065	0.01
R^2		0.469	0.01	−0.006	0
Significance	0.876	<0.001	0.8	0.525	0.992

Errors are in parentheses.

5. Discussion and Conclusions

Recent studies [14] claim that companies seeking to improve innovativeness or ability to develop novelties should employ external knowledge, especially companies trying to obtain new knowledge or technologies through spillovers. Scientists began to pay attention to how companies cooperate and collaborated in transferring knowledge within the same region [14]. This scientific curiosity encouraged us to focus our study on knowledge transfer from advanced economies to an advanced economy, since most studies explore knowledge transfer from an advanced economy to a less developed one [46,48]. This understanding dates back to the 1950s, when researchers believed that the positive impact of foreign capital was only possible if inward FDI flowed from a rich to a poor country [50]. Furthermore, the choice to analyze collaboration between Nordic countries and the Baltic States was based on the assumption that short geographical distance, cultural similarities and history act as encouragement of successful knowledge transfer.

The research demonstrated that companies often introduce social innovations [23–25,57], and a moderate relationship exists between social innovation and innovation development [31]. However, our finding disproved [17,43] some studies in the case of measuring linkages between innovations and external factors influencing innovations, as no correlation was found. Hence, our research confirms [14,58,59] that there is a positive relationship between absorptive capacity and external factors. Mainly government's support and private funding may increase the innovativeness of the company, since many companies' lack of funding is viewed as one of the main obstacles for developing innovation. However, copying initiatives to promote innovation from other countries may not be effective in stimulating the innovativeness of the companies, since different companies have different learning abilities [14]. In some cases, even cultural barriers might have an indirectly negative impact [59]. Additionally, our study disproved that in all cases, a relationship exists between innovation and absorptive capacity [10,11]. However, these results might be explained by the different research objects or business sectors. For example, one study [58] focused only on the high-tech types of innovation, showing that innovation performance has strong interlinkages with the absorptive capacity. In addition, the quality of innovations was found to be higher, which indicates a higher level of absorptive capacity. On the other hand, a Spanish study [59] that concentrated on absorptive capacity only in industrial companies proved that high capacity of knowledge acquisition and assimilation does not necessarily indicate that a company would be able to use that knowledge for developing innovation. From our results, we can make an assumption that Nordic capital companies do not intend to invest in high-tech sectors in Estonia and Lithuania, or that the level of qualification of human potential in parenting and subsidiary is different. Thus, for further insights, additional modelling is required.

Theoretical implication and importance of the dataset for other researchers. This research article created value and added to the field in several ways. *From a theoretical point of view,* the results contribute to multidisciplinary concepts, such as internalization, FDI, knowl-

edge transfer, theories of innovation, and absorptive capacity. First, the article provides four alternative constructs to assess the benefits of innovation, external factors influencing investment (development) of creation, absorptive capacity, interlinkages between innovations, and transfer from a linear to a circular economy. Furthermore, our study extends the research in the context of knowledge transfer through FDI between advanced economy countries, as most of the studies focus on knowledge transfer from advanced to emerging countries or less developed ones [24,48]. Validity and reliability are evaluated in all constructs; thus, they might be applied to other studies. Furthermore, the dataset file contains the questionnaire's construct on the third spreadsheet sheet. The questionnaire is prepared in line with previous similar studies [10–13,17–19,21–24]. The validity and reliability of the data have been checked. The estimated measurements fit the required ones [55,60]. The data are suitable for analyzing the interlinkages between the chosen aspects. The information on the size and age of the company is provided, setting age and size as control variables. Thus, this instrument might be applied by researchers focusing on the four dimensions (acquisition, assimilation, transformation, and exploitation) of absorptive capacity in a company. Primarily, these data might be helpful for studies emphasizing collaboration between companies that are supposed to result in R&D, patents, or innovations. Our research is valuable as it confirms the work of [11,12] and disproves some previous studies [48]. Thus, the study contributes and advances to the interdisciplinary theories. The results have shown that more than 60% of the companies have implemented at least one improvement (or introduce innovations) within five years [52]. The data of the research and provided construct might be used by other researchers while analyzing a company's innovativeness from various different perspectives.

Managerial impact. In addition, such insights and obtained data might be helpful for Nordic capital companies, as the study may assist in analyzing the reasons for the low number of patents developed in subsidiaries located in Estonia and Lithuania. Although PCA demonstrated that the most significant benefit of innovation companies is "improvement of products and services", the main external factor that determines innovation is "investment in business research", and the most significant impact on the main component of absorptive capacity is made by "higher technological education". Thus, we may assume that companies should carefully evaluate the investment into research and consider if there is no lack of employees holding a degree in technological sciences. Based on these results, some measures to improve the innovativeness of the company might be introduced. Furthermore, the prepared constructs might be used by the companies for self-evaluation. It might be particularly interesting for foreign capital companies to analyze the problems and challenges the company faces when introducing or developing innovations [61].

Limitations and future research. Although the study demonstrated exciting results, as with every investigation, our study has several limitations. First, the survey was conducted in the case of collaboration between Nordic countries, Estonia and Lithuania in the context of knowledge and technology transfer. Hence, the survey has not been validated in other countries or did not evaluate the impact of collaboration between Estonia and Lithuania. Additionally, our survey did not focus on specific business sectors. Thus, the results might be different if the study had focused only on companies in high-tech or other industries, which requires more innovation and advanced technologies. Hence, Estonia and Lithuania are small countries with a relatively small number of companies. Thus, we might have focused on the problem of the sample. Future research might be focused on confirming and applying the proposed constructs to other studies. For example, establishing constructs with the different samples might be interesting, expanding research to the countries and specific business sectors. Furthermore, to increase responsiveness, several data collection methods might be applied. Fourth, although the study considers cultural aspects and geographical distance while absorbing, assimilating, and exploiting knowledge, further studies might include the factors that help us to understand what factors determine a company's willingness to transfer knowledge, especially when it may lead to innovation development.

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