Relocation Activities for the Development of Employment and Competitiveness Situations

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Abstract

The recent version of the European Manufacturing Survey (EMS) responses was captured in Finland by asking companies' CEOs or cognizant personnel (n=123) to respond. This study aims to report the results of the following Development of Competitiveness and Employment Situations (DCES) covering Annual Turnover (AT), Number of Employees (NE), Manufacturing Capacity Utilization (MCU), Return on Sales (ROS) concerning corporations' operations: Relocation Activities (RAs) converging to Offshoring Manufacturing Performance (OMP), Backshoring Foreign Manufacturing (BFM); Offshoring R&D (ORD); and Backshoring Foreign R&D (BFRD). The defined research question, "How do the DCES and RAs relate?" was answered by seeking influences directly for AT and NE corresponding to all RAs positively except negative BFRD. Large corporations can be said OMP, but the sample also has smaller companies those that BFM. The reason for BFM could be the decreased ROS with a statistically significant negative impact during the COVID-19 fiscal year 2021.

Keywords

Industry 4.0; Global Supply Chain Management; Manufacturing Competitiveness; Relocation Activities; Offshoring; Backshoring

1 Introduction

Curiosity for shoring has a variety of motivations (Fratocchi et al. 2014). Initializing first with firms strategies exploring the results of the European Manufacturing Survey (EMS) Finland discuss research on key enabling technologies for manufacturing. Heilala (2022ab) found that manufacturing technologies' parent variables: production control was accurate, automation and robotics were not even near, efficiency technologies were very far away, and simulation, data analyses, and additive manufacturing were on the same page, as manufacturing capacity utilization or returns on sales were not evenly distributed among the technologies variables in use. Thus, the study found the association with returns and explained why technology integration benefits what organization concepts are fulfilled (Heilala 2022abc). The organization concepts were considered to assess current organizational innovations in manufacturing technologies by structuring the operations in optimized rotation to ensure that the technologies used are efficient for high manufacturing capacity and return on sales contribution. To this end, a fascinating question arises; "Where do companies use their technologies and employees to grow their profits?" competitiveness is built by locating in an optimal business location. For the large organizational differences, the respondees' operating environment is an important consideration in understanding the development of employment and competitiveness situations more broadly. The inflationary and deflationary weaknesses or advantages explain how some corporations had negative and very positive financial indicators for operations and why the organization concepts and manufacturing technologies' beneficial use varies on a large scale largely. Could the measure include corporations with multi-site foreign operations?

This paper aims to find out the Relocation Activities (RAs) practices of the companies that responded to the survey operating in the Finnish Servicing Manufacturing Market Environment (FSMME) for the first time concerning the development of employment and competitiveness Situations (DCES). The data were acquired using the European Manufacturing Survey (EMS), and generally, from the responses, CEOs and equivalent leaders gathered the most unity in their organizations from the department heads. Past research in the EMS consortium has tied most EU member states' RAs to the free-access publication level, where the study findings have helped newcomers and existing players to position and change their intuitional strategies based on open research guidelines (Kinkel & Maloca 2009; Dachs et al. 2012; Dachs & Kinkel 2013; Kinkel 2014; Dachs & Zanker 2015; Dachs et al. 2019).

This report follows the method used in EMS, multi-method, quantitative research. It has a reliably broad dissemination method, as the research was disseminated through multiple channels to reach as many interested CEOs as reachable. The collection, pruning, and splitting of the dataset into parts are explained concerning the entirety of this study. The analysis method was to fit regression to see the dummy variables in connection with the operations used in the companies in a very cross-sectional manner. The data analysis convergently investigates the mutual relationships between all thematic subsets on relocation operations, relying on the first given descriptive variables that show a very representative spectrum, which is critical for a few corporations. Introductory to the foreign operations anatomy travel destinations and reasons will be given by the respondees practices, which could have been more evenly distributed. For the respondees' rareness, the image is used in all companies for consideration, whether situations require changes within the scale of the likelihood for larger turnover and number of employees, and whether external factors selectively affecting different companies' operations are unequally operating.

The unevenly distributed negative random factors justify offshoring research and development to the more technologically advantaged locations among corporations to gain leverage of the deflationary levers speculatively or to increase the global market share. For instance, offshoring foreign manufacturing for large corporations expects increased manufacturing capacity utilization and thus return of sales while requiring smaller corporations to backshore foreign manufacturing because the negative return on sales can occur as rising prices in less deflationary advantaged countries, which have been reported during the COVID-19 fiscal year 2021. For over some time, history shows that years before now, climate change has been a fatal factor in generating losses, resulting in vulnerabilities in value chains, which will be emphasized in the future (Raza et al. 2021). It is claimed that the different quartiles of the entrepreneur series' lowest tail can suffer losses. It is explicitly associated with digitalization laggards (OECD 2021, 6-7) and easily measurable costs, particularly labor (adapted to Heilala 2022a; Dachs et al. 2019). If labor costs suddenly increase, it creates a challenge to maintain the company's operations as a counterweight to serving the market efficiently. Urgent backshoring of foreign research and development needs is likely the reason for raised cost structures that surpass the return on sales and are also expected negatively, walking hand in hand with annual turnover and number of employees, expecting smaller corporations to take damage in foreign markets and transition production back to headquarters.

2. Research problematization and hypotheses

Machine learning-governed supervised learning can resolve observations in the spectral dimension with astonishing precision, offering several ways of examining the phenomenon. It involves interdisciplined, systemic action conducive to cross-sectional validity over the EMS database content. The RQs treat subconcepts under top-level research questions. A research question identifies relocation activities that can serve to assist decision-makers within corporations and other institutions in determining the level, association, and context of the development of employment and competitiveness situations in the Finnish manufacturing market environment. Before integrating the research questions, the following sub-research questions were defined to cover the study objectives:

- 1. How did corporations' offshoring manufacturing performance operations predict the study sample respondees by annual turnover measures, number of employees amount, factories manufacturing capacity utilization, and return on the sales side?
- 2. How does sample respondee corporations' backshoring foreign manufacturing plot change in the site expect the study by annual turnover measures, number of employees amount, factories manufacturing capacity utilization, and return on the sales side?
- 3. How does corporations' offshoring R&D use expect the entire purview of the study sample respondees by annual turnover measures, number of employees amount, factories manufacturing capacity utilization, and return on the sales side?
- 4. How do corporations backshoring foreign R&D use expect sample respondees the entire span by annual turnover measures, number of employees amount, factories manufacturing capacity utilization, and return on the sales side?

What was the most efficient way for companies to decentralize their operations to achieve the highest levels of competitiveness? Hypotheses mapping was conducted based on the EMS database findings to address the research questions. Through the recursive modeling of sub-research questions, 32 hypotheses were established regarding latent entities according to the cross-sectional approach to Table 1.

	AT	NE	MCU	ROS	OMP	BFM	ORD	BFRD		
AT	1									
NE	n.s./n.c.	1								
MCU	n.s./n.c.	n.s./n.c.	1							
ROS	n.s./n.c.	n.s./n.c.	n.s./n.c.	1						
OMP	n.s./n.c.	n.s./n.c.	n.s./n.c.	n.s./n.c.	1					
BFM	n.s./n.c.	n.s./n.c.	n.s./n.c.	n.s./n.c.	n.s./n.c.	1				
ORD	n.s./n.c.	n.s./n.c.	n.s./n.c.	n.s./n.c.	n.s./n.c.	n.s./n.c.	1			
BFRD	n.s./n.c.	1								
Note hypothesized variables axioms: not having significant relation/not correlating (n.s./n.c.), while 1 indicates to satisfy.										

Table 1. Construct correlations hypotheses

3. Research methodology

3.1 Research set up

Finland's first EMS results compiled. The research was distributed virtually but also in printable form for large corporation divisions' support to be filled by pen and responded to by departments from or on behalf of CEOs or other community members (Heilala 2022bc.). The sources are input from the web portal news and e-mail newsletter.

3.2 Analysis protocol

The EMS database was analyzed with mixed methods to understand intrinsically quantifiable metrics from the database and its variables indices collected and definable. The variable tensors were measurable from the logged sessions the respondees mentioned above gave in the Webropol system. (Heilala 2022bc.) the analysis method from this dataset is used to understand how the manufacturers are positioned in the Finnish servicing manufacturing market environment, likely also in foreign operations. The most laborious part was the dataset pruning and selecting the responses for the information acquisition forms given responses. Explanatory variables analysis was suggested to be implemented by probing interactions on multilevel regression (Dachs & Kinkel 2013), which is taken into account in developing the measurement depths in Finnish and European scales for variable computational interaction situations. The employment and competitiveness of the industry are susceptible to marginalized results. Even in a single study or series of studies of EMS, quantitative data is collected, analyzable form to be able to simulate the researcher's philosophical questions. According to this approach, quantitative and qualitative approaches can be combined more effectively than either approach alone to understand research problems better. (Creswell & Plano 2007).

The selected variables are logical in the cross-sectional investigation of companies, whereby best and worst mean ends are inferential to the effects of one predictor on another. Relocating businesses establishes conditional relation towards growth, best measured by annual turnover and the number of employees. The probing interaction whether the value of offshoring or backshoring would be omitted from specific companies working in domestic markets. The movement of operations can expect specific companies and characteristics to explain the responses that explain the behavior as the dependent variable, to which the range of variables can provide explanations e.g., for operations. When the whole spectrum is considered, the other measurements can provide existing alternatives, which can be seen as unsatisfying for some researchers. This is why this research protocol does not standardize the measurement relations but focuses on preparing regression. Explanatory variables are used to analyze the data for regression. For the analysis of connections, the correlation coefficients were used instead because, for embedded correlation modeling, the model is not interested in variable dependencies or directions, i.e., they have been omitted. Since the sum of variables cannot be multicollinear to be processable, there should not be a strong correlation among variables, which is supportive of choosing meaningful variables for regression. Because variables should not have neutral correlations for integrative variables, these can be omitted. The variables can only be used if a linear result is obtained. Regression analyses are generally believed to be reliable when at least 40 observations per variable exist. A sample-specific steering analysis can only be performed since the clustering sample size (n = 123) covers only this study's sample. Ultimately, the regression test can be used to determine confidence intervals. We suggest that the European Commission supports Horizon Europe (HE) funding by following the regression analysis results and deducing the EMS characteristics' outcomes in, for example, project organization forming. (Heilala 2022bc.) It is also

possible to use correlation coefficients as predictors since they also serve as explanatory rates, but the continuous variables have no position on the directions.

4. Data Analysis

4.1 Descriptives

The descriptives provide information about the variables' measures. Minimum to maximum indicates respondents' response range: Annual Turnover (AT) values (million \in); Number of Employees (NE) displays employees count; Manufacturing Capacity Utilization (MCU) indicates the usage of the main operations; Return of Sales (ROS) value scale indicates (from 1 to 5: negative, 0-2%, >2-5%, >5-10%, and >10%) before tax; and Offshoring Manufacturing Performance (OMP); Backshoring Foreign Manufacturing (BFM); Offshoring R&D (ORD); and Backshoring Foreign R&D (BFRD) reveal if the company has been in transient mode (binary). (adapted to Heilala 2022a; 2022b; 2022c.) The relations based on embedded correlation modeling are about the sum variables' relation to each other, i.e., the sum of the variables for each dimension of the European Manufacturing Survey has been calculated and then divided by the number of total variables, cf. Table 2.

	MIN	MAX	М	MED	MOD	STD	SKEW	KURT	SUM	VALID
AT	0	339	26.219	6	1	52.445	3.767	17.641	2071	79
NE	3	600	84	40	12	115.41	2.335	5.98	7140	85
MCU	0	100	66.67	75	80	28.975	-1.227	0.664	4267	64
ROS	1	5	3.42	4	5	1.567	-0.509	-1.29	267	78
OMP	0	1	0.12	0	0	0.329	2.354	3.629	10	82
ORD	0	1	0.09	0	0	0.281	3.023	7.319	7	82
BFM	0	1	0.04	0	0	0.19	4.996	23.54	3	81
BFRD	0	1	0.01	0	0	0.111	9	81	1	81

Table 2. Construct descriptives

The mean of 26.219 million euros and the standard deviation of 52.445 million euros are calculated for a sample of zero to 339 million euros AT. The sample distribution appears to have a positive skewness, as a few participants fall at the most positive end of the tail. A platykurtic model's distribution is negatively skewed for MCU and ROS. According to leptokurtic peak performance for AT, the sample included a few large and some smaller companies. Based on the fact that the largest provider has 600 employees, while the smallest provider has three, NE has similar curve characteristics to AT, following its skew and kurtosis. ROS is the last, perhaps most captivating, indicator of competitiveness (M = 1, 2 to 5). (Heilala 2022bc.) a grand mean of 3.42 implies that, on average, companies have positive returns. For the operations side, it is highly likely that in the light of statistics, very few corporations have faced offshoring and backshoring activities because all distributions are skewed positively to the binary zero, while few players face challenging situations. 12 % of the corporation offshored manufacturing, 8.5 % offshored R&D operations, 4% backshore manufacturing, and 1% backshore R&D. After all, there are no generalizable results foreseen for the sample operations here in terms of transfer, except that the majority do not transfer. However, it is important to look at the learning ability factors and what kind of companies usually perform this activity, which we delve deeper into next.

4.2 Model Correlations

It is possible to determine the correlation between the development of employment and competitiveness situations and relocation activities model parameters of interest using Pearson's correlation (R), which describes how two variables change together over time. In non-linear correlations, variation is represented from -1 to 1 in the R-coefficient, determining the intensity and direction of linear correlations. The positive value shows that the variables are perfectly correlated, the negative value indicates an inverse correlation, and when the value is near 0, the variables do not match. Barlett's sphericity test indicates a barely satisfactory score for the model because the unsaturation is so high. The determinant (d=.051) and Kaiser-Meyer-Olkin values for the individual investigation of the relocation activities on development of competitiveness and employement situations are (0.52 to 0.56). The model yielded values in Table 3. (Heilala 2022bc.)

The research questions share different weaknesses than (Heilala 2022b). How the results' reader herein should position the scale depends on the viewpoint on the study design for assessing the results. Whether to take

responses seriously together makes a barely satisfactory model, but on the other hand, reducing respondees could have led to gaining a perfectly validatable model. The first one requires a curious angle of entry on scale effects because there are large corporations among smaller ones, and the large corporations are not necessarily revealing or have information for relocation activities available. At the same time, the model's hard quantitative grounding explores the very few factor outcomes by the CEOs' responses that were yielded in EMS and rotated through regression and resulted in relocation activities outcome space shown in Table 4. (to manufacturing key enabling technologies and organizational concepts used and adapted from Heilala 2022abc.) The tool proves to have low internal consistency in correlative means. However, its performance measure does not reject its factorability, and it can always be done in pairs if the model weaknesses reproduce challenges further.

	AT	NE	MCU	ROS	OMP	BFM	ORD	BFRD
AT	1							
NE	0.905****	1						
MCU	0.244**	0.18*	1					
ROS	0.243**	0.179*	0.298**	1				
OMP	0.228**	0.283**	0.046	0.042	1			
BFM	0.085	0.168*	0.037	-0.171*	-0.075	1		
ORD	0.135	0.257**	-0.049	0.091	0.357***	-0.06	1	
BFRD	-0.078	-0.083	-0.013	-0.21	0.391***	-0.029	0.487****	1
Note: results are not having significant relation/not correlating (n.s./n.c.), ****p<0.001, ***p<0.01, **p<0.05 and *p<0.1								

Table 3. Construct correlations

Table 4 shows the DCES having the same connections as in (Heilala 2022a; 2022b). The model had a relatively small number of players on OMP or within other actions. In theory, however small the signals caused by the movements are, they are essential in convergent validity since corporations seek different growth-related achievements when expanding to international markets. The table findings indicate that the OMP is relatively highly predictable by the AT. It is because large corporations are needed to move from domestic markets to foreign in terms of possibly supplying the manufacturing feed on the customer locations beneficially, which requires further investigation and clarification in forthcoming Figure 1.

On the contrary, BFM is the majority. However, a proportionally slightly lower number of players are expected to impact repatriating operations, as can also be seen in Figure 1. MCU perspective without clear statistical significance to validate results, and the connection remained relatively low. However, the directions are interesting because statistical dispersion and randomness are not random. However, intentional retreating for players' businesses, appearing as statistical anomalies, are significant results and should be taken seriously. It calls for a closer look at what perspectives were retracted. It would seem that OMP and ORD walk hand in hand, while BFM and BFRD do not seem to be in contact with each other. It also showed meaningful links to ORD, confirming that the players keep operations alive by repatriating old operations and connecting to new areas simultaneously, which needs closer examination in Figure 1.

Figure 1 map coding and legends indicate that the OMP has focused on the Baltics (Estonia, Lithuania, Latvia), Central Europe (Poland), Southwestern Europe (Portugal), East Asia (Japan and China), South Asia (India), The US, and Canada. The reason is that the operation costs, i.e., price and certainty, are opportunist for employee relocation from the opportunistic beginning of the core company. In some cases, delivery time is much quicker. Secondly, BFM expects respondents to relocate to the headquarters of their parent company. Thirdly, for multisite-based operations, ORD is popular for travel destinations in North-western Europe (Belgium), Central Europe (Germany and Poland), Baltics (Estonia), South Asia (India), Nordic countries (Norway and Sweden), southwestern Europe (Spain). Due to the availability of labor or competencies at a reasonable cost, the owner of an unidentified corporation contends that BFRD from India is feasible due to the lack of functional performance available (based on EMS22 open-ended data, own study.)



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Figure 1. Certain Travel Destinations for Offshoring Manufacturing Performance (OMP); Backshoring Foreign Manufacturing (BFM); Offshoring R&D (ORD); and Backshoring Foreign R&D (BFRD) connections (Source: Own study adaptation to de Souca Vieira (2013).

5. Conclusions

To answer the first research question, based on the data from the research, companies' production outsourcing activities predicted the extent of total employment and competitiveness development outsourcing activities in terms of annual turnover, such that medium-sized companies with turnover typically transfer production. At the same time, the number of employees refers to reasonably large companies. Concerning the number of employees, the reason for moving operations abroad is primarily cheap labor (e.g., China) - but the printouts are very cheesy from their consistency, as it is only visible in some companies' manufacturing capacity utilization and corresponding returns. Furthermore, this shows that only some things can be successfully carried out in domestic markets, i.e., reasonably weak Finnish entrepreneurs offshore their operations abroad because it may be more profitable in the light of the research results but resembles a risk-taking. A small signal indicates that the production runs fluently and better in foreign operations. When the market is pulling either ostensively or performatively led, it appears as positive returns, so the given recommendation from the sample is to move operations overseas while keeping the core business innovation in Finland.

To address the second research question and answer the prospects of companies' backshoring foreign manufacturing operations: whereby companies operating in Finland have recorded a response of forced or volunteering (not directly measured the cause- or reason) to transfer their business back to domestic trade has been processed. At this point, the changes to be announced are expected in the scope of the relocation activities operations for the development of employment and competitiveness situations perspective in terms of annual turnover positively but not equal statistically. However, in terms of the number of employees, there seems to be regularity, meaning that, by and large, companies of the same size belong to a cluster number of employees with a fairly strong connection. This cluster is also affected by a small rising production capacity utilization rate and negative return sales, statistically significantly showing the reason to move back because production costs have increased in the country of production.

In order to answer the third research question, we discuss the expected total employment of R&D offshoring and the extent of transfer measures intended to develop competitiveness in terms of annual turnover, which is a fairly positive relationship without equality, i.e., companies have weaker and stronger actors that do not outsource R&D. However. It can appear as an ideal model for companies that do not do this. The motivating result is that if the company offshores R&D operations, the company has a lot to do with the number of employees, so it is worth outsourcing research, but with caution. The justifying factor may be that the company wants to increase its small production capacity.

Finally, let us move on to the strict place exchange fence, the fourth research question, to answer how companies' use of backshoring foreign R&D expects the full extent of relocation activities intended to develop employment and competitiveness in annual turnover. It gave negative and statistically insignificant results, but it is a critical topic of conversation in practice. This means that some small companies are bringing their

businesses back to Finland, meaning that technology is being patriated. However, it also speaks of challenges because the number of employees is seen expecting sample's small companies. The negative manufacturing capacity utilization appears to be a small cause- or reason for this, whereby the relation to returns is also strongly negative due to lacking sales. None of these is statistically a good thing. However, on the contrary, the research results show that small entrepreneurs bring their R&D functions back because the offshored performance fails to sustain at expected levels.

References

- Chia-Yen, L. & Andrew, J. Effective production: measuring of the sales effect using data envelopment analysis. Annals of Operations Research, 453-486, 235, 12, 2015.
- Creswell J, Plano Clark V. Designing and conducting mixed methods research. Thousand Oaks, CA: Sage Publications, 2007.
- Dachs, B., Kinkel, S., Jäger, A. & Palcic, I. Backshoring of Production Activities in European Manufacturing. Journal of Purchasing and Supply Management, 25, 2019.
- Dachs, B., Kinkel, S., & Jäger, A. Bringing it all back home? Backshoring of manufacturing activities and the adoption of Industry 4.0 technologies. Journal of World Business, 2019.
- Dachs, B. & Kinkel, S. Backshoring of production activities in European manufacturing Evidence from a large-scale survey, Conference: 20th International Annual EurOMA Conference At: Dublin, Ireland, 2013.
- Dachs, B., Borowiecki, M., Kinkel, S., & Schmall, T.: The Offshoring of Production Activities in European Manufacturing. <u>https://mpra.ub.uni-muenchen.de/42973/</u>, 2012, accessed 21.11.2022.
- Dachs, B. & Zanker, C.: Backshoring of Production Activities in European Manufacturing. <u>https://mpra.ub.uni-muenchen.de/63868/</u>, 2015, accessed 21.11.2022.
- De Souza Vieira, G. Simpliefied World Map, https://commons.wikimedia.org/wiki/File:Simplified_World_Map.svg, 9.5.2014, accessed 21.11.2022.
- Fratocchi, L., Barbieri, P., Di Mauro, C., Nassimbeni, G., & Vignoli, M. Manufacturing Back-reshoring An Exploratory Approach for Hypotheses Development, Conference: XXIV Riunione Scientifica Annuale Associazione Italiana di Ingegneria GestionaleAt: Politecnico di Milano, Milan, Italy, 2013.
- Gourdon, K. & Steidl, C. "Global value chains and the shipbuilding industry", OECD Science, Technology and Industry Working Papers, No. 2019/08, OECD Publishing, Paris, 34, 8/2019.
- Heilala, J. ISPIM. Deployment Of Competitive Techno-organizational Global Supply Chain Management. XXXIII ISPIM INNOVATION CONFERENCE. The International Society for Professional Innovation Management. 5-8.6.2022 Copenhagen, 2022a.
- Heilala, J. Finnish Technology-oriented Manufacturing-Service Companies would benefit more from integrating Efficiency and Simulation, Data analysis, and Additive Manufacturing. XXXIV ISPIM INNOVATION CONFERENCE. The International Society for Professional Innovation Management. 28-30.11.2022 Athens, 2022b.
- Heilala, J. Developing competitiveness and employment situations based on organization practices. 10th International Conference on Environment Pollution and Prevention (ICEPP 2022). 16-18.12. Australia, Sydney, 2022c.
- Kinkel, S. & Maloca, S. Drivers and antecedents of manufacturing offshoring and backshoring A German perspective. Journal of Purchasing and Supply Management, 154-165, 2009.
- Kinkel, S. Future and impact of backshoring—Some conclusions from 15 years of research on German practices, Journal of Purchasing and Supply Management, Volume 20, Issue 1, 63-65, 2014.
- Lester, A. Companies respond to customer needs with demand-driven manufacturing. <u>https://www.techtarget.com/searcherp/feature/Companies-respond-to-customer-needs-with-demand-driven-manufacturing</u>, 1.8.2013.
- Machek, O. & Machek, M. Factors of Business Growth: A Decomposition of Sales Growth into Multiple Factors. WSEAS Transactions on Business and Economics. 11. 380-385, 2014.
- Metinvest. The Use of Metal in Aircraft Construction: Steel, Aluminium and Composites. <u>https://metinvestholding.com/en/media/news/metalli-v-samoletostroenii-stalj-alyuminij-kompoziti</u>, accessed 21.11.2022, 2020.
- OECD. , OECD SME and Entrepreneurship Outlook 2021. OECD Publishing. https://www.oecd.org/industry/smes/SME-Outlook-2021-Country-profiles.pdf, accessed 21.11.2022, 2020.
- Raza, W., Grumiller, J., Grohs, H., Essletzbichler, J., Pintar, N., and European Parliament. (2021). Post Covid-19 value chains: options for reshoring production back to Europe in a globalized economy. <u>https://www.europarl.europa.eu/thinktank/en/document/EXPO_STU(2021)653626</u>, accessed 21.11.2022, 2020.
- Yi, Hwa & Park, Sambock & Kim, Jonghyun. The Effects of Business Strategy and Inventory on the Relationship between Sales Manipulation and Future Profitability. Sustainability, 11, 2377, 2019.