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The impact of strategic agility on the performance of Polish and Finnish SMEs during the COVID-19 pandemic. A comparative study

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Abstract. This paper examines the correlation between the strategic agility (SA) of small and medium-sized enterprises (SMEs), as evaluated by one sub-dimension (opportunity focus) of the EMICO scale (Fiore et al., 2013), and their performance during the COVID-19 pandemic. The research is based on data from two groups of companies operating in Poland and Finland. Telephone and online interviews (CATI, CAWI) were conducted with owners and managers of SMEs from both countries in December 2020 and January 2021. The findings have not found any significant relationships between strategic agility and performance for the two SME samples from Poland and Finland when interviews were conducted during the COVID-19 pandemic. Thus, our first hypothesis was not confirmed. This may be explained by the unprecedented disruptions in social and economic life, on the one hand, and the wide availability of generous state-sponsored assistance programs, on the other hand, which both distorted market mechanisms. Our second hypothesis, assuming the negative impact of the COVID-19 pandemic on firms' performance, has been confirmed. However, the negative impact was more substantial for sales dynamics (affected by market disturbances and restrictions) than for profits (improved by government assistance programs) for both SME samples.

Keywords: strategic agility, performance, SME strategy.

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1. INTRODUCTION

The COVID-19 pandemic is one of the most recent major disruptive events, impacting businesses worldwide and causing disruptions in global value chains (Zahoor et al., 2022; Sakurai & Chughtai, 2020). Studies by Brown & Rocha (2020), Juergensen, Guimón, & Narula (2020), and Baranowska-Prokop & Sikora (2023) indicate that the pandemic affected all economic sectors, with small and medium-sized enterprises (SMEs) being particularly vulnerable due to their limited resources. Consequences such as restricted access to finance, reduced business activity, supply chain disruptions, and travel restrictions have been among the notable effects of this sudden exogenous shock (Miklian & Hoelscher, 2021). However, amidst these challenges, unexpected business opportunities have also emerged, with the potential to bring significant value to firms that choose to capitalize on them (Am et al., 2020). Moreover, numerous SMEs elected to implement digital technologies such as blockchain, the Internet of Things, and AI in response to COVID-19-inflicted containment measures and labor shortages (Papadopoulos et al., 2020). Furthermore, SMEs reacted differently to the severe exogenous shock caused by the pandemic and its consequences depending on their region and country of operation (Gunessee & Subramanian, 2020). Therefore, a comparison of the business approach that SMEs from a post-transitional country (Poland) and SMEs from a leading SMOPEC country (Finland) chose to navigate the turbulent environment may shed new light on the role of strategic agility in a firm's performance.

2. LITERATURE REVIEW

2.1. SMEs

Small and Medium Enterprises (SMEs) are crucial for the survival of many world economies, given their substantial contribution to the Gross Domestic Product (GDP) of numerous countries. They significantly contribute to employment generation and play vital roles in both the service and production sectors of many economies. Supporting this assertion, Govuzela and Mafini (2019) argue that SMEs play a strategic role in the economic performance of any country. This role is evident in their production of goods and services, their innovation, and their support of larger businesses (Aga, Francis, & Meza, 2015). In the Polish economy, the SME sector plays a crucial role, contributing 50% of GDP, employing 7 million people, and accounting for 99.8% of all enterprises (PARP, 2020). However, the number of Polish SMEs per capita and their average contribution to GDP growth remain below the EU average (58%), highlighting the need for stronger SME support. In contrast, SMEs in Finland constitute 98% of all businesses, generate 59.6% of total value-added, and provide 65.2% of national employment (European Commission, 2019). Before the COVID-19 pandemic, Finland outperformed EU averages in key areas such as employment rates, value-added, entrepreneurship, responsive administration, access to finance and skills, and innovation (European Commission, 2019). As a result, Finnish SMEs can serve as a model for effective and modern strategic business practices.

2.2. Strategic agility

The concept of strategic agility is not a new one in management literature. The first use of the term “strategic agility” is found in Roth (1996) but one of the best-known definitions was coined by Weber and Tarba (2014) and goes as follows: *Strategic agility is an ability of management to constantly and rapidly sense and respond to a changing environment by intentionally making strategic moves and consequently adapt the necessary organizational configuration for its successful implementation.* It describes the extent to which an organization's management is expected to adapt, be creative, and foresee unexpected shocks inside and outside the business environment

in which it operates. Besides this, the essential capacity of managerial staff should be the ability to respond to them proactively, quickly, and effectively, such that threats are transformed into opportunities (Tilman and Jacoby, 2019; Denning, 2018a; Al Shehab, 2020). Tende and Ekanem (2018) described strategic agility as the ability to anticipate and predict trends in the business environment while implementing timely and appropriate measures. They emphasized that an organization's survival no longer depends solely on financial resources, but also on its ability to adapt quickly to environmental changes. Similarly, Akhigbe and Onuoha (2020) argued that long-term survival is not solely determined by resilience but by an organization's flexibility to adapt and remain relevant. Therefore, strategic agility is crucial for businesses, particularly in times of crisis, such as the turbulent conditions brought about by the pandemic, which create significant uncertainty and a lack of transparency.

2.3. Performance

The idea of organizational performance has struggled to achieve a universally accepted definition. Different perspectives abound; some measure it through quantitative indexes like profitability, Return on Investment (ROI), and market share, among others.

Another approach suggests that performance describes how well an organization achieves its goals and objectives, as noted by Sosiawani et al. (2015) and Wales et al. (2013). It's demonstrated through the completion of tasks by employees and the quality of those tasks at the end of a specific business period, compared to predetermined targets or aims, as highlighted by Ledwith and O'Dwyer (2014) and Yıldız (2010).

In turbulent and ambiguous environments (VUCA), strategic agility (SA) is vital for the survival and longevity of any organization. Adopting SA facilitates firms in continuously and effectively adjusting to the dynamic business environment, adapting their strategic direction in core business areas to changing circumstances, and being responsive to the business environment, as emphasized by Ofoegbu and Akanbi (2012). Numerous studies suggest that the capacity to flexibly respond to market disruptions and swiftly implement strategies has a positive impact on a firm's performance (Muthuveloo, R., Ping, T. A. (2020); Shin, J. et al. (2015), Dobrovic (2018). The literature review has indicated that SA has improved the competitive advantage and overall performance of any organization significantly Arokodare et al., 2019). Moreover, Gerald et al. (2020) found that strategic agility positively affects the anticipated impact on SME performance. Also, recent publications by Adomako, S. (2022) and Lfarajat, J. (2023) confirm these findings.

A comparison between the EMICO scale for evaluating entrepreneurial marketing, developed by Fiore et al. (2013), and the previously mentioned definition of strategic agility suggests that three specific statements can serve as an operationalization of strategic agility:

- We regularly pursue untapped market opportunities regardless of budgetary or staff constraints.
- My business excels at identifying marketing opportunities.
- When new market opportunities arise, my business quickly acts on them.

These statements constitute a distinct sub-dimension of the EMICO scale, referred to as “opportunity-driven,” within the broader dimension of “opportunity-vigilance.” The second sub-dimension under this dimension, “proactive orientation,” is not included in this research. Other key dimensions of the EMICO scale include “consumer-centric innovation” and “value creation” (Fiore et al., 2013).

3. HYPOTHESIS DEVELOPMENT

This research primarily aims to examine the relationship between strategic agility and the market performance of Polish and Finnish SMEs, while also assessing the impact of COVID-19-related restrictions on their market performance.

Hypothesis assuming positive relationship between strategic agility and measures of enterprises' performance is based on, e.g. Roberts and Grover who argued that "*in today's hypercompetitive environment, firms that are agile tend to be more successful*" and found positive relationships between agility measures they used and enterprises' performance (Roberts & Grover, 2012, p. 579) and on results from our previous research based on "pre-COVID-19" sample of Polish SMEs (Sikora, Baranowska-Prokop, 2021 and Sikora, Baranowska-Prokop, 2023) where we found positive relationships between strategic agility and performance.

H1: There is a positive relationship between strategic agility and firms' results (performance).

Our questionnaire takes into account various forms of market turbulence and disruptions in economic activity resulting from COVID-19 restrictions. Given that the consequences of these restrictions affected nearly all sectors of industry and services, we have formulated the following hypothesis:

H2: COVID-19-related disruptions had a negative impact on the market performance of SMEs

4. RESEARCH METHOD

Our findings are based on a survey conducted among the owners and managers of Polish and Finnish SMEs during the COVID-19 restrictions. The data was collected in December 2020 and January 2021 through questionnaires sent to representative samples of SMEs in both countries. All of the firms were established after 1995. A random selection was made within two strata: small and medium-sized companies, and non-exporters and exporters with at least 15 percent of their sales generated abroad.

Data was gathered via an internet questionnaire (CAWI) and telephone interviews (CATI) based on the previously sent questionnaire. For Polish SMEs, the total sample size was 219 firms, selected from a database of 1,395 Polish SMEs that met the sampling criteria. The sample included 49.8 percent exporters and 50.2 percent non-exporters. Of the firms, 37.9 percent were medium-sized, and 62.1 percent were small enterprises.

For Finnish SMEs, the total sample size was 81 firms, selected from the database of the Finnish Trade Association that met the sampling criteria. The sample included 50.6 percent exporters and 49.4 percent non-exporters. The share of medium-sized enterprises was 35.8 percent, while small enterprises made up 64.2 percent.

5. RESEARCH RESULTS

Independent variables: Firms' characteristics and strategic agility

The first set of independent variables includes firms' characteristics such as size (small vs. medium-sized), export status (exporter vs. non-exporter), and the country of origin (Poland vs. Finland).

Strategic agility (SA) is another independent variable, measured using the "opportunity-driven" sub-dimension of the EMICO scale (Fiore et al., 2013). All items were rated on a seven-point scale, ranging from "strongly disagree" (1) to "strongly agree" (7).

For the Finnish SME sample, the reliability of the scale is high, with a Cronbach's alpha coefficient exceeding 0.9 (0.92). The values of the items were summed, and the final scale ranges from 3 (very low level of SA) to 21 (very high level of SA). Descriptive statistics for this scale are presented in Table 1.

Table 1

Descriptive statistics for the measure of SA (scale of strategic agility) - Finnish SMEs sample

Descriptive Statistics ^a							
	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
The scale of strategic agility	81	14,22	2,837	-,383	,267	,167	,529
Valid N (listwise)	81						

a. Country = Finland

Source: own elaboration, based on Indicator data, 7-point scale

The responses tend to favor the higher end of the scale, suggesting that there are more firms with high SA than those with low SA.

The scale demonstrates strong reliability for the Polish SME sample, with a Cronbach's alpha coefficient of over 0.9 (0.919). As with the Finnish sample, item values have been summed, resulting in a final single scale that ranges from 3 (indicating a very low level of SA) to 21 (indicating a very high level of SA). Descriptive statistics for this scale can be found in Table 2.

Table 2

Descriptive statistics for the measure of SA (scale of strategic agility) - Polish SMEs sample

Descriptive Statistics ^a							
	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Scale of strategic agility	219	13,68	2,894	-,205	,164	-,522	,327
Valid N (listwise)	219						

a. Country = Poland

Source: own elaboration, based on Indicator data, 7-point scale

The responses are skewed towards the higher end of the scale, suggesting that there are more firms with high SA than those with low SA.

Dependent Variables: Indicators of Firms' Performance

Given the lack of precise profit and sales figures for Polish and Finnish SMEs, descriptive questions regarding firm performance were used instead.

Two types of performance measures were considered:

- General declarations of profits or losses for 2019 and 2020.
- Declarations about sales trends in 2020 compared to 2019, and in 2019 compared to 2018. Since the data collection period (December 2020 and January 2021) coincided with uncertainty about 2020 outcomes, these results are referred to as "estimated" in the questionnaire.

Respondents from companies assessed the level of profit/loss and sales dynamics using a five-point scale. The profit/loss scale includes: substantial loss (1), small loss (2), result close to zero (3), small profit (4), and substantial profit (5).

The sales dynamics scale, also based on a five-point scale, includes: substantial decrease by 2-digit percent (1), decrease by 1-digit percent (2), no change (3), increase by 1-digit percent (4), and substantial increase by 2-digit percent (5).

Table 3 presents descriptive statistics for declarations about profits or losses and sales evolution for the sample of Finnish SMEs.

Table 3
Descriptive statistics for declarations about profits or losses and sales evolution for the Finnish SME sample

Descriptive Statistics ^a							
	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Financial results in 2020 (estimated)	81	3.56	.791	-1.043	.267	1.578	.529
Sales dynamics in 2020 (estimated) compared to 2019	81	3.17	.959	.428	.267	-.721	.529
Valid N (listwise)	81						

a. Country – Finland

Source: own elaboration based on Indicator data

For the Finnish SMEs, the majority of companies declared profits (reflected by a mean above 3.5 and negative skewness for this measure of market performance); however, sales dynamics were weaker (average slightly above 3).

Finland helped its enterprises during the COVID-19 pandemic with an assistance package amounting to 15 billion euros. The Finnish government has decided upon a total €15 billion general package to support corporations, ensure jobs, and finance unemployment subsidies for laid-off employees. On April 7th, 2020, the Government announced that it contemplates redirecting an additional €0.5 billion in funds to support corporations. The addition was planned to be distributed by the existing public finance providers (e.g., Finnvera, Business Finland, ELY, etc.)” (KPMG, 2020, p. 1). Therefore, firms remained profitable despite stagnant or declining sales.

Table 4 presents descriptive statistics for declarations about profits or losses and sales evolution for the Polish SMEs sample.

Table 4
Descriptive statistics for declarations about profits or losses and sales evolution for the Polish SME sample

Descriptive Statistics ^a							
	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Financial results in 2020 (estimated)	219	3.36	.945	-1.042	.164	.685	.327
Sales dynamics in 2020 (estimated) compared to 2019	219	2.99	.995	.525	.164	-.602	.327
Valid N (listwise)	219						

a. Country – Poland

Source: own elaboration based on Indicator data

While most companies reported profits (evidenced by a mean above 3 and negative skewness for this market performance measure), sales dynamics were weaker (with a mean below 3.0). This result can be attributed to the Polish government’s implementation of the “Anti-COVID-19 Shields” in 2020, a financial

support package totaling approximately 66.3 billion euros, the largest in Poland's modern history. The package enabled Polish SMEs to suspend or defer social security payments for three months, subsidized up to 40 percent of the average 2019 salary for employees in affected sectors, offered income support for the self-employed, and strengthened the financial system (CSM, 2020). These measures allowed companies (as it was in the case, analogically, of Finnish SMEs) to remain profitable despite stagnant or declining sales.

Although Finnish companies reported better performance than their Polish counterparts, the difference in profits and sales dynamics was not statistically significant.

Comparison of strategic agility between Polish and Finnish SMEs

Tables 5 and 6 show the results of a comparison of SA levels between Polish and Finnish SMEs.

Table 5

Descriptive statistics related to SA levels are broken down by country, size, and export engagement

Country * Size of the enterprise * Non-exporters and exporters						
Dependent Variable: Scale of strategic agility						
Country	Size of the enterprise	Non-exporters and exporters	Mean	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
Finland	small: 10 - 49 employees	non-exporters	11,920	,432	11,070	12,770
		Exporters	15,148	,416	14,330	15,966
	medium-sized: 50 - 249 employees	non-exporters	13,600	,558	12,502	14,698
		Exporters	17,214	,577	16,078	18,351
Poland	small: 10 - 49 employees	non-exporters	11,031	,268	10,503	11,558
		Exporters	14,056	,256	13,552	14,561
	medium-sized: 50 - 249 employees	non-exporters	14,400	,322	13,766	15,034
		Exporters	16,632	,350	15,942	17,321

Source: own elaboration based on Indicator data

We may see that in each of the two countries, medium-sized exporters show the highest level of SA, and the small non-exporters the lowest level of SA.

Table 6

Results of univariate analysis of variance explaining levels of SA by country, size of enterprise, and export engagement

Tests of Between-Subjects Effects					
Dependent Variable: Scale of strategic agility					
Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	1125,077a	7	160,725	34,444	,000
Intercept	44334,726	1	44334,726	9501,044	,000
country	10,612	1	10,612	2,274	,133
small-mdmszd	320,352	1	320,352	68,652	,000
exp-nonexp	499,421	1	499,421	107,027	,000
country * small-mdmszd	16,486	1	16,486	3,533	,061
country * exp-nonexp	8,573	1	8,573	1,837	,176
small-mdmszd * exp-nonexp	,567	1	,567	,122	,728
country * small-mdmszd * exp-nonexp	4,751	1	4,751	1,018	,314
Error	1362,560	292	4,666		
Total	59813,000	300			
Corrected Total	2487,637	299			

a. R Squared = ,452 (Adjusted R Squared = ,439)

Source: own elaboration based on Indicator data

Results in Table 6 indicate that there is no significant difference between Polish and Finnish firms as far as the level of SA is concerned.

There are, however, significant interactions related to higher levels of SA, in both countries, declared by exporters compared to non-exporters and by medium-sized firms compared to small ones (Table 5).

Verification of hypotheses

Our first hypothesis assumed a positive relationship between SA and firms' performance. Tables 7 and 8 show the results of correlations between the SA scale and two measures of firms' performance.

Table 7

Correlations between SA and Finnish SMEs performance

Correlations ^a		Scale of strategic agility
Scale of strategic agility	Pearson Correlation	1
	Sig. (2-tailed)	
	N	81
Financial results in 2020 (estimated)	Pearson Correlation	,000
	Sig. (2-tailed)	1,000
	N	81
Sales dynamics in 2020 (estimated) compared to 2019	Pearson Correlation	-,074
	Sig. (2-tailed)	,511
	N	81

a. Country = Finland

Source: own elaboration based on Indicator data

Table 8

Correlations between SA and Polish SMEs performance

Correlations ^a		The scale of strategic agility
The scale of strategic agility	Pearson Correlation	1
	Sig. (2-tailed)	
	N	219
Financial results in 2020 (estimated)	Pearson Correlation	,147*
	Sig. (2-tailed)	,030
	N	219
Sales dynamics in 2020 (estimated) compared to 2019	Pearson Correlation	,171*
	Sig. (2-tailed)	,011
	N	219

*. Correlation is significant at the 0.05 level (2-tailed).

a. Country = Poland

Source: own elaboration based on Indicator data

Correlation analyses show no support for the first hypothesis in the Finnish sample and a very weak one (very weak significant positive correlations) in the Polish sample.

However, when other firms' characteristics are taken into account (size, export engagement, branches of industries and services) results of linear regression analyses do not support this hypothesis for Polish SMEs, because SA is not a significant predictor of SMEs performance.

The second hypothesis assumed that COVID-19-related disruptions negatively affected firms' performance.

Tables 9 and 10 show descriptive statistics related to firms' performance for pre-COVID-19 and COVID-19 periods separately for Finnish and Polish SMEs.

Table 9

Descriptive statistics for declarations about profits or losses and sales evolution for the Finnish SMEs sample for pre-COVID-19 and during COVID-19 periods

Descriptive Statistics ^a							
	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Financial results in 2020 (estimated)	81	3,56	,791	-1,043	,267	1,578	,529
Sales dynamics in 2020 (estimated) compared to 2019	81	3,17	,959	,428	,267	-,721	,529
Financial results in 2019	81	3,86	,802	-,640	,267	,305	,529
Sales dynamics in 2019 compared to 2018	81	3,88	,857	-,002	,267	-1,154	,529
Valid N (listwise)	81						

a. Country = Finland

Source: own elaboration based on Indicator data

We can see that the means for the two measures of a firm's performance decreased in 2020 compared to 2019. The average for financial results dropped from 3.86 to 3.56, and the average for sales dynamics dropped even more, from 3.88 for 2018/2019 to 3.18 for 2019/2020.

Table 10

Descriptive statistics for declarations about profits or losses and sales evolution for the Polish SMEs sample for pre-COVID-19 and during COVID-19 periods

Descriptive Statistics ^a							
	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Financial results in 2020 (estimated)	219	3,36	,945	-1,042	,164	,685	,327
Sales dynamics in 2020 (estimated) compared to 2019	219	2,99	,995	,525	,164	-,602	,327
Financial results in 2019	219	3,68	,891	-,630	,164	-,144	,327
Sales dynamics in 2019 compared to 2018	219	3,70	,904	-,119	,164	-,638	,327
Valid N (listwise)	219						

a. Country = Poland

Source: own elaboration based on Indicator data

For the Polish SMEs, we can also see that means for the two measures of the firm's performance decreased in 2020 compared to 2019. The average for financial results dropped from 3.68 to 3.36 and the average for sales dynamics dropped more substantially from 3.70 for 2018/2019 to 2.99 for 2019/2020.

When the COVID-19 period and pre-COVID-19 period are compared results for Finnish enterprises indicate that 2.5% of them declared improvement in financial results and 0% in sales dynamics. Financial results did not change for 66.7% and sales dynamics were stable for 40.7% of enterprises. Financial results deteriorated for 30.9% and sales dynamics deteriorated for 59.3% of enterprises.

When the COVID-19 period and pre-COVID-19 period are compared results for Polish enterprises indicate that 2.7% of them declared improvement in financial results and 0% in sales dynamics. Financial results did not change for 63.0% and sales dynamics were stable for 36.1% of enterprises. Financial results deteriorated for 34.2% and sales dynamics deteriorated for 63.9% of enterprises.

We can consider that these results support hypothesis two about the negative impact of COVID-19-related disruptions on firms' performance.

6. CONCLUSION

The primary outcome of our study indicates that no significant relationships were found between strategic agility and performance for the SME samples from both Poland and Finland, based on interviews conducted during the COVID-19 period.

Thus, our first hypothesis is not confirmed. The main explanation for the findings is an unprecedented extent of disruptions in social and economic life, on the one hand, and the wide availability of generous state-sponsored assistance programs, on the other hand. Both of these phenomena substantially distorted market mechanisms.

Our second hypothesis, assuming the negative impact of the COVID-19 pandemic on firms' performance has been confirmed, but for SME samples for the two countries, the negative impact was stronger for sales dynamics (affected by market disturbances and restrictions) than for profits (which were improved by government assistance programs).

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