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Awareness of system strategies and their implementation

ABSTRACT

The aim of this study is to determine the recognition and awareness of systemic strategies within the realm of practical business operations at three different levels of the organizational hierarchy. Two research hypotheses have been formulated. H1: The implemented strategy will be described as systemic. H2: Employees will assert the implementation of strategies through a systemic approach. The hypotheses were tested using a questionnaire survey administered to a convenience sample of postgraduate/post-diploma working students associated with sales functions. The survey included 1,400 respondents, divided into a pre-pandemic sample of 1,050 individuals and a post-pandemic sample of 350 individuals. A combination of traditional paper questionnaires and computer-assisted telephone interviews (CATI) was used to collect responses. The analysis of the survey responses reveals that the respondents from both the 2019 and 2022 cohorts do not affirm the existence of systemic strategies within their respective organizations. Furthermore, they do not claim that these strategies are implemented from a systemic perspective.

Keywords: strategy, strategy implementation, sales function, system theory, finance and management

JEL Classification: M1, G3

Introduction

Systemic approach to strategy

The concept of an organisation as a system of interacting elements has been expounded in several scholarly works, with e.g. Ackoff [1973], Bertalanffy and Belz [Bertalanffy, 1984; Belz, 2011] and Stabryła [1984] being prominent contributors to this discourse. Selznik [1948] posited that an organization is a construct of appropriately coordinated resources, personnel and dynamic forces, which is also explained by Luhmann in numerous contexts [Luhmann, 1995; 2004; 2013]. It is also related to the linking of financial objectives and activities with non-financial ones. These pioneering scholars emphasize the notion that viewing an organization as a monolithic entity, neglecting the intricacies of its components, not only hinders our ability to draw robust conclusions, but also hinders the scope of strategic management. Within this academic framework, different approaches have emerged for analyzing organizations, structuring their resources, functions, and processes, and setting and implementing strategies. These approaches emphasize that organizations should be understood as complex systems of interrelated components. They highlight the fact that the achievement of competitive advantage and the effective development and execution of strategy require an understanding of the organization's constituent elements, both in isolation and as an integrated whole. In contemporary perspectives, the system extends beyond traditional organizational boundaries to include elements from the broader external environment [Snabe, Grossler, 2006].

The systemic approach to strategy and its implementation has been developed in a few ways. General systems approach [von Bertalanffy, 1984], cybernetics [Wiener, 2013], dynamic systems [Richardson, 2004], non-linear systems [Devaney, 2018], systems methodology [Schwaninger, 2006] and open systems [Bititci, Spanellis, 2023]. However, these are based on the assumption that any organization consists of numerous elements that need to be managed in order to achieve the expected results. This is an important basis for the development of methods of strategy implementation that refer to this rule.

The methods and approaches to strategy implementation selected for the study were those that both the authors themselves indicated or at least suggested could be used for this purpose, were later confirmed by subsequent authors, or could be found in the literature as indications of a particular approach to strategy implementation. As a result, approaches to strategy implementation were selected, although this allocation is not always clear and obvious. Four approaches to strategy implementation were selected, those that are aligned with the systems approach: Strategic Fit [Scholz, 1987], 7S [Waterman et al., 1980; 2012], St. Galler [Ruegg-Sturm, 2004; 2014; Ruegg-Sturm, Grand, 2016] and General Management Navigator [Muller-Stewens, Lechner, 2003]. It is clear that this selection is not exhaustive of the approaches to implementing systemic strategies.

For some, the literature seemed to provide a preliminary answer, but for others, assumptions had to be made and many doubts had to be dispelled. The key to attribution was primarily the evidence in the literature, with particular weight given to the statements of the authors of the method, where these could be clearly identified.

The primary objective of this research is to measure the degree of familiarity of strategy implementers and the economic prosperity of the organization with the well-established systems approach to strategy and its implementation, as well as the relatively well-developed toolkit for its execution.

The research was conducted within the cohort of postgraduate/post-diploma students enrolled in SGH Warsaw School of Economics Sales Management and related postgraduate programmes. These individuals self-identify as being actively involved in tasks related to the sales function, which is strongly related to strategy execution. The research sample comprised 1,050 respondents prior to the onset of the SARS-CoV-2 pandemic and was subsequently reduced to 350 respondents following the ongoing challenges of the pandemic. The research was conducted through the conventional distribution of questionnaires to participants, with additional interviews facilitated by the CATI method.

This research initiative was prompted by unprecedented market dynamics, including stringent lockdown measures and restrictions induced by the SARS-CoV-2 pandemic. These events led to a re-evaluation of perspectives on strategy and its implementation, emphasizing the need for collaboration between a variety of internal and external constituents within the organizational framework [Romano et. al., 2021, Coetzee, 2021]. The study sought to determine whether employee perceptions of system strategies had evolved in response to the evolving landscape characterized by increased complexity and interdependence.

Research question, hypotheses, and research sample

The study addresses one research question and presents related hypotheses:

Research question (P1): Are systemic strategies implemented in a systems approach?

Hypothesis 1 (H1): The implemented strategy will be described as systemic.

H1-: The implemented strategy will not be described as systemic.

Secondary hypothesis 2 (H2): Employees will assert the implementation of strategies through a systemic approach.

Auxiliary hypothesis (H2a): The strategy described as systemic is implemented in a systemic approach at the tactical level.

Auxiliary hypothesis (H2b): The strategy described as systemic is implemented in a systems approach at the operational level.

The study uses two variables to test these hypotheses:

Variable V5 (declaration of having a systemic strategy) and Variable V6 (declaration of implementing the strategy in a systemic approach) at the tactical and operational levels.

The primary aim of these hypotheses (H1, H2a, and H2b) is to assess whether, according to the respondents, the implemented strategy is consistent with a systemic approach and, if so, whether it follows a systemic approach that includes methods, approaches, and techniques associated with systemic strategies at both tactical and operational levels.

A critical criterion for accepting hypotheses H1, H2a, and H2b as valid is whether the mean score of the questions is 3.0 or above on a scale of 1–5. A positive confirmation of these hypotheses would lead to further exploration of strategy approaches and implementation methods. On the other hand, if all or some of these hypotheses are rejected, the subsequent hypotheses will explore the reasons for the lack of strategy implementation and identify the approaches in which the strategy is not implemented. The questionnaire was tested on a control group of 25 respondents. The results were verified by the appropriate order of the questions, their readability, and the way they are understood. After the results were collected, Cronbach's alpha coefficient was checked to verify the reliability of the questionnaire. The critical ratio based on the grouping of the test scores was also checked.

The survey was conducted among three groups of respondents corresponding to different levels within the organizational hierarchy: top managers involved in strategy development or implementation at the strategic level, middle (tactical) and lower (operational) level managers, and executives. The distribution of respondents was based on data from Statistics Poland (GUS), which reported that in 2020 there were 8.9 million people in employment, while the working population was estimated to be 14,500,000 people by the end of 2020 [GUS, 2021a]. Within the working population, individuals in managerial positions were categorized as 'officials, senior officials, and managers', comprising approximately 1 million people out of a total of 16 million. Based on this data and the objectives of the study, the survey included 85% senior managers, 10% middle and lower managers and 5% top managers. Although this approach may have its limitations, it is consistent with the objectives of the study to examine strategy implementation using structured methods. Therefore, the survey was conducted among 1,050 employees before the pandemic and 350 employees after the pandemic (Table 1).

Table 1 The number of respondents categorized according to their position within the formal organizational hierarchy

Operational level 1	Middle level 2	Executive level 3	Total N
pre-pandemic			
892	105	53	1,050
post-pandemic			
297	35	18	350

Source: own work.

The research was conducted in two phases: the pre-pandemic phase in 2019 and the post-pandemic phase at the end of 2021 and the first half of 2022.

Test of the model

Cronbach's alpha for the survey confirmed its reliability with a value of 0.8. The distribution of responses for each question followed a log-normal pattern, as confirmed by P-P (probability-probability) and Q-Q (quantile-quantile) plot analyses.

To test the hypotheses, an ANOVA analysis was used for each of the study groups, comparing the results for employees at the top, middle, and executive levels of the organizational hierarchy. This approach includes methods for investigating strategy implementation through multi-level analyses. The ANOVA analysis involves comparing the error covariance matrix with the effect covariance matrix. In each case, the validity of the ANOVA was assessed using Bartlett's test of sphericity, while the within-group variation was assessed using Wilks' lambda (Table 2).

Table 2. Wilks test

	Test	Value	F	Effect df	df error	p
free	Wilks	0.084022	831.0495	14	1028.000	0.000000
V1	Wilks	0.475976	23.3241	28	2056.000	0.000000
V2	Wilks	0.894852	4.1942	28	2056.000	0.000000
V1*V2	Wilks	0.820563	3.7263	56	4000.873	0.000000

Source: own work.

V1 is categorized into three levels:

1 – the lowest level in the organisation, operational. 2 – the middle level in the hierarchy, tactical. 3 – the highest level in the hierarchy, strategic, executive.

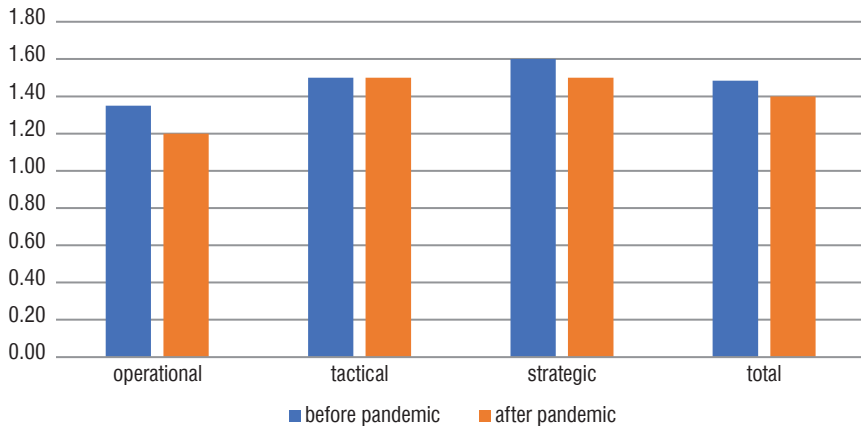
According to Wilks' lambda (Table 2), it is evident that V1 (level in the organizational hierarchy) provides a more significant differentiation between the study groups and reflects better the differences between these groups compared to V2 (organisation size). However, it should be noted that both variables, V1 and V2, do not fully explain the observed differences.

A synthetic attempt to assess awareness of systemic strategy implementation in a systems approach

Top managers report consistently the highest values in terms of declaring the existence of systemic strategies. This observation applies both to the survey conducted in 2019 and to the survey conducted immediately after the pandemic period in 2021/2022. It is important to note that the differences between these two periods are not statistically significant. However, it is clear that in both periods, the declarations of having systemic strategies are generally very low, hovering around the lowest value on the 1–5 scale used for the assessment (Graph 1). In

particular, these declarations are particularly low at the operational level, which is consistent with the findings of previous research [Pindelski, 2019]. The tactical and operational levels show relatively similar levels of expressed opinions.

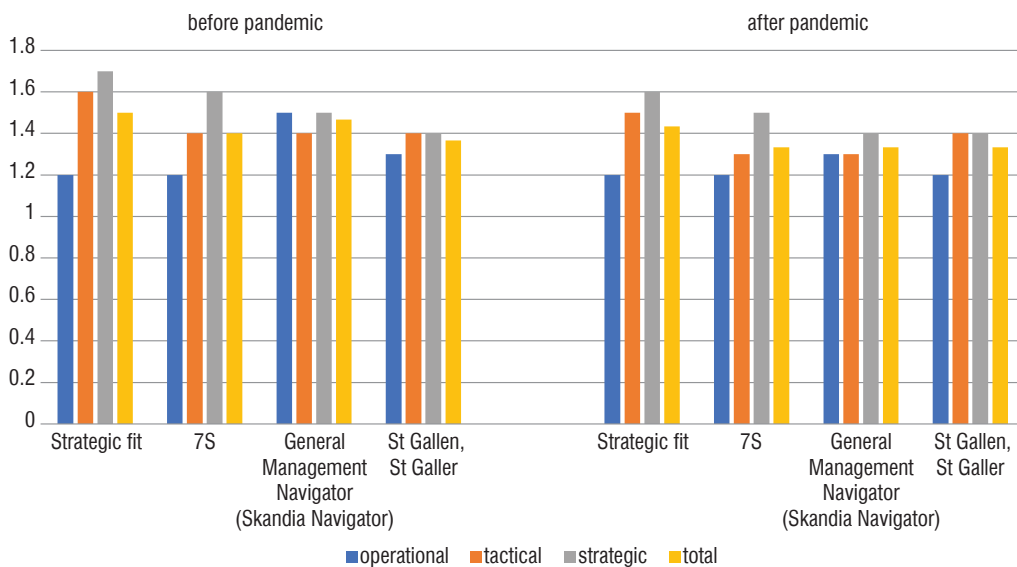
Graph 1. Average scores for declarations of having a system strategy



Source: own work.

The survey included a series of questions designed to assess the presence and familiarity of well-structured approaches, methods, and techniques for strategy implementation (Graph 2). These questions were used to measure the level of familiarity at each level of the organizational hierarchy.

Graph 2. Average scores for declarations of familiarity with systemic approaches to strategy implementation



Source: own work.

The presence and presumed familiarity with the names of approaches to strategy implementation are more frequently reported by those at the strategic level. Nevertheless, these findings are rather discouraging and there is little basis for concluding that even those at the strategic level are well versed in these methods. This pattern holds across companies of all sizes (Graph 2).

Table 3 The average declaration scores for approaches, methods, and techniques for strategy implementation in groups according to the level of the organizational hierarchy

Approach to strategy	pre-pandemic N	892	105	53	1050
	variable V1	1	2	3	1–3
	Methods, models	operational	middle level	top / executive	Total
SYSTEM	Strategic fit	1.2	1.6	1.7	1.50
	7S	1.2	1.4	1.6	1.40
	General Management Navigator	1.5	1.4	1.5	1.47
	St Gallen. St Galler	1.3	1.4	1.4	1.37
	post-pandemic N	297	35	18	350
	Strategic fit	1.2	1.5	1.6	1.43
	7S	1.2	1.3	1.5	1.33
	General Management Navigator	1.3	1.3	1.4	1.33
	St Gallen. St Galler	1.2	1.4	1.4	1.33
Average					1.395

Source: own work.

The graph (Graph 2) and the table presented (Table 3) shows that all levels of the hierarchy have a very low awareness of the existence of individual methods of strategy implementation in a systems approach. Scores below 2.0 on a scale of 1–5 indicate that these approaches, methods and techniques are basically non-existent in the perception of the respondents. This low awareness is observed for Strategic Fit, General Management Navigator and related approaches. Although the scores are slightly higher at the strategic level, it cannot be assumed that the strategic level is familiar with these methods.

Hypotheses verification

In testing hypothesis H1 and auxiliary hypotheses H2a and H2b, the primary aim was to establish the relationship between the variables of strategy ownership and strategy implementation, and system ownership and strategy implementation using system methods. Across the entire group of respondents, in both the pre-pandemic and pandemic samples, the distribution of scores for statements about having systemic strategies is left skewed, with a significant percentage of people reporting the lowest score on the scale (1.0). This suggests that it may be difficult to find a relationship (co-occurrence) between the declaration of

strategy implementation (V4) and the declaration of having a system strategy (V5), even at the strategic level.

Table 4. Kruskal-Wallis rank ANOVA, grouping variable V1, dependent variables V5 and V6

Variable	Kruskal-Wallis Test	V1 (hierarchy level)	N significant	Sum of ranks	Average rank
V5	H (2, N= 1,050) = 11.99 p = 0.00	1	1,189	469142.00	525.94
		2	140	49120.00	467.81
		3	71	33513.00	632.32
V6	H (2, N= 1050) = 3.98 p =0.1368	1	1,189	462914.50	518.96
		2	140	57681.50	549.35
		3	71	31179.00	588.28

Source: own work.

An ANOVA analysis of the Kruskal-Wallis ranks (Table 5) shows a low variation in the results for the declaration of strategy implementation in a systemic approach and a slightly higher variation for the declaration of having a systemic strategy. This low variation is observed in each of the groups studied in terms of hierarchy level. However, the highest scores are observed at the highest level of the hierarchy.

Table 5. Correlation of variables in groups of respondents by hierarchy level (V1)

	Variables before pandemic								
	V4	V5	V6	V4	V5	V6	V4	V5	V6
V1	operational			middle level			top/executive		
V3	0.65	0.04	0.00	0.42	0.09	0.03	0.64	0.34	-0.03
V4		-0.02	0.07		0.00	0.05		0.17	0.04
V5			0.46			0.14			-0.02

correlation coefficients are significant with $p < 0.05$, $N > 1,050$, missing data were removed by chance

	Variables after pandemic								
	V4	V5	V6	V4	V5	V6	V4	V5	V6
V1	operational			middle level			top/executive		
V3	0.61	0.08	0.04	0.40	0.11	0.02	0.47	0.32	-0.03
V4		0.00	0.12		0.01	0.07		0.16	-0.01
V5			0.44			0.11			-0.02

correlation coefficients are significant with $p < 0.05$, $N > 350$, missing data were removed by chance

Source: own work.

The analysis of correlation coefficients (Table 5) shows very low results for each group of respondents, indicating weak correlations between the variables related to strategy and its implementation. However, there is one exception. The group of strategic managers shows a relatively higher correlation coefficient of 0.34 before and 0.32 after the pandemic between

the variables *declaration of having a strategy* (V3) and *declaration of having a systemic strategy* (V5). The pairs of variables V3 (*declaration of having a strategy*) and V4 (*declaration of implementing a strategy*) show the highest level of correlation coefficient at both the operational and strategic levels. It is interesting to note that the correlation coefficient between the two variables V3 and V4 is lower after the pandemic, which may lead to the conclusion that the employees perceive the pandemic as a factor affecting strategy implementation.

An analysis of the mean scores shows that the highest mean score for the declaration of having a systemic strategy (V5) was achieved by the group of top managers from medium-sized organizations (2.29) and the lowest by the operational staff in the smallest organizations. However, all the mean scores are still relatively low, suggesting that systemic strategies and their implementation from a systemic perspective are perceived by the respondents as largely non-existent. An analysis of the medians (Table 6) confirms these findings. In each of the groups surveyed, the majority of responses are below the median of 2.0. The operational level tends to perceive the possession of a systemic strategy more than its systemic implementation (with a lower score), while the strategic level tends to perceive its implementation more than its systemic strategy. However, these scores are all at such low levels that no firm conclusions can be drawn from this analysis about the existence of systemic strategies and their implementation. These results suggest that the respondents perceive systemic strategies and their implementation in systemic terms as relatively rare in their organizations.

Table 6. Median test V5 and V6, grouping variable V1

V1	V5 overall median = 2.00 Chi square= 12.58 df = 2 p = 0.00			Total N	V6 overall median = 2.00 Chi square= 5.19 df = 2 p = 0.07			Total N
	1	2	3		1	2	3	
Total Observed	1,189	140	71	1,400	1,189	140	71	1,400
<= median observed	709	97	38	844	771	88	40	899
Expected	716.99	84.40	42.60		763.72	89.90	45.38	
obs.-exp.	-7.99	12.60	-4.60		7.28	-1.90	-5.38	
> median observed	183	8	15	206	121	17	13	151
Expected	175.00	20.60	10.40		128.28	15.10	7.62	
obs.-exp.	7.99	-12.60	4.60		-7.28	1.90	5.38	
Observed pre-pandemic	892	105	53	1,050	892	105	53	1,050
Observed post-pandemic	297	35	18	350	297	35	18	350

Source: own work.

Based on the results of the analyses, it is appropriate to reject the hypotheses. There is no observable concordance between the declaration of strategy implementation and the declaration of having a systemic strategy, even at the strategic level of the organizational hierarchy.

Hypotheses H2a and H2b should also be rejected. It is more plausible to conclude that in cases where strategies do not adhere to a systemic framework, their implementation is unlikely to follow a systemic approach.

Summary

The results of the analyses carried out clearly showed that from the perspective of employees at different levels of the organisational hierarchy, both before and during the pandemic, systemic strategies were not systematically declared and implemented at all the levels of the organization, as indicated by the respondents. However, it is important to recognize that the research primarily measured awareness of the existence and implementation of systemic strategies, rather than their actual existence and implementation.

It is noteworthy that the analysis generally revealed a parallelism between an organization's strategy statement and its implementation, albeit with certain nuances. In particular, the findings suggest that, according to employees, if an organization has a strategy, it is likely to implement it, albeit with some reservations.

Table 7. Verification of the hypotheses

No.	Hypothesis		Verification	Remarks
1	H1	<i>The strategy implemented is described as systemic</i>	Negative	The implemented strategy is not a systemic strategy
2	H2	<i>Employees assert the implementation of strategies through a systemic approach</i>	Negative	The strategy is not systemic and is not implemented with systemic methods
3	H2a	<i>The strategy described as systemic is implemented in a systems approach at the tactical level</i>	Negative	The strategy is not systemic and is not implemented with systemic methods
4	H2b	<i>The strategy described as systemic is implemented in a systemic approach at the operational level</i>	Negative	The strategy is not systemic and is not implemented systemically

Source: own work.

The articulation and implementation of strategy is attributed primarily and to the highest degree to the strategic, top level, and to a slightly lesser extent to the tactical level. However, the operational level, which bears the brunt of strategy implementation, seems to have a less clear understanding of the fact that its activities serve to achieve the objectives set by higher levels in the organizational hierarchy. This suggests that there is a noticeable difference in awareness between the different levels of the hierarchy about the path of strategy implementation. In essence, this indicates a discrepancy between the hypotheses concerning systemic strategies (H1, H2a, H2b), as the interrelationship between strategy implementation and systemic strategies, as well as the execution of systemic strategies within a systemic framework using systemic methods, cannot be substantiated.

Furthermore, the knowledge of the methods for implementing systemic strategies is very limited. These methods, approaches, and techniques for implementing systemic strategies exist mainly as theoretical concepts rather than practical applications. This may be due to their somewhat unstructured nature or a potential misalignment with contemporary organizational needs. These methodologies moderately reconcile the strategic viewpoint with the implementation methods recognised at the operational level. The result of this study implies a fundamental lack of a discernible link between strategies in both the conventional and contemporary systemic paradigms and their manifestation within this framework. This highlights the need for further research in this area, which could include an investigation of the actual prevalence of systemic strategies through case studies and observational methods. Such research could provide both cognitive insights and valuable contributions to both academic and management practice. It is plausible that further research should delve deeper into this area, particularly with the objective of corroborating the associations between strategy approaches and their subsequent implementations.

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Appendix

Variables used

No.	Variable	Characteristic
1	V1	Level in the organizational hierarchy
2	V2	Size of a company (number of employees)
3	V3	Declaration of strategy in place
4	V4	Declaration of strategy implementation
5	V5	Declaration of having a system strategy
6	V6	Declaration of the implementation of the strategy in a systemic approach

Source: own work.