

Impact of Uncertainty on Organizational Strategy and Structure: Mersin Foreign Trade Firms' Response to Covid-19

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ABSTRACT

Purpose – This study examines the changes made by organizations in their structures and strategies in response to the environmental uncertainty caused by the Covid-19 pandemic. The contingency theory suggests that organizations try to survive by changing to adapt to their environment in the face of sudden changes in their environment. The aim of this study is to reveal what kind of strategic and structural changes organizations in Turkey have made during the Covid-19 pandemic.

Design/methodology/approach – In order to evaluate whether the environmental uncertainty caused by the Covid-19 pandemic leads to strategic and structural change as stated in the theory, 76 foreign trade firms registered with the Mersin Chamber of Commerce and Industry and ranked in the top 100 in the list of export transactions originating from Mersin port, with annual export sales of more than \$10 million, were chosen as the study's sample. The data were collected through a questionnaire. Simple linear and ordinal logistic regression analyses were used to analyze the data.

Findings – Increase in environmental uncertainty has a positive and significant relationship with the organization's orientation towards differentiation strategy, while it has no effect on the organization's orientation towards cost leadership strategy. In addition, structural change in the mechanistic direction has a positive and significant effect on the organization's orientation towards cost leadership strategy, while structural change has no significant effect on the orientation towards differentiation strategy. Moreover, environmental uncertainty did not have a significant effect on structural change. Finally, no significant relationship was found between the change in the strategy of the organization and the mechanistic change of the organizational structure. Overall, although the Covid-19 pandemic increased environmental uncertainty, organizations in the sample of this study did not make significant structural and strategic changes.

Discussion – Organizations were not completely indifferent to environmental change, responded to change tactically with temporary and instantaneous reactions and did not make sustainable permanent changes. The excessive rise in prices (sales) led to unexpected and extraordinary increase in profitability and thus organizations did not consider major change necessary.

Keywords: Contingency Theory; Strategy Change; Structural Change; Environmental Uncertainty; Covid-19 Pandemic.

JEL Classification Codes: D22, D83, L20, L90

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INTRODUCTION

Toward the end of 2019, the Covid-19 pandemic began to impact businesses and daily life significantly. It led to widespread changes in daily life, including social interaction, consumption patterns, and business operations. Countries imposed quarantine restrictions, closed borders, limited travel and access to necessary services to control the pandemic. These restrictions made it more difficult for businesses to operate both domestically and internationally, causing major disruptions in global supply chains. The pandemic, thus, created widespread uncertainty across businesses linked to global supply chains. Given the existing literature on the relationship between environmental uncertainty and organizational structure and strategy, we anticipate

that the Covid-19 pandemic may have caused significant impact on organizational structure and strategies. Thus, this study aims to examine how the pandemic has influenced changes in organizational structure and how strategic and structural changes influence each other in an environment characterized by increased uncertainty.

We draw on the contingency framework to address our question. In this framework, the environment is a key factor affecting organizations. Moreover, there is a continuous and occasionally significant change within the environment, creating uncertainty for organizations (Emery and Trist, 1965). Uncertainty, defined as inability to make predictions about the future (Daft, 2015), would force organizations to change their strategies and structures to adapt to their environment.

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According to Burns and Stalker (1961), for an effective organizational design, the internal structure of the organization should be changed according to the demands of the organizational environment. Accordingly, organizations will have different structures depending on whether they operate in stable environments that change little over time or dynamically. In this context, Burns and Stalker (1961) classified organizational structure into two categories: mechanistic and organic. Mechanistic structures tend to involve highly centralized power and authority and formalized bureaucracies, with rigid communication channels and narrow job divisions. Organic structures, on the other hand, are decentralized and less formal, with more flexible channels of communication and broader job divisions. Mechanical structures are considered more effective in environments characterized by low levels of change and uncertainty, whereas organic structures are more appropriate in dynamic and uncertain environments (Burns and Stalker, 1961; Mintzberg, 1979).

According to Chandler (1962) organizations respond to changes in their environment by first modifying their strategies and then adapting their structures to their new strategies. Since Chandler's (1962) influential study, many scholars have argued that in a dynamic and uncertain environment, organizations tend to apply a differentiation strategy involving creativity and product innovation, whereas in a stagnant or low-uncertainty environment, organizations are more likely to apply a cost leadership strategy involving a focus on internal efficiency, cost minimization, and low prices. More specifically, a differentiation strategy requires an organic structure, which is more conducive to creativity, innovation, and entrepreneurial behavior (Burns and Stalker, 1961; Covin and Slevin, 1988). On the other hand, a cost leadership strategy may be more congruent with a mechanistic structure, which focuses on minimizing cost. Thus, not only the environment but also business strategy is a key determinant of organizational structure. However, the proposition that structure follows strategy has been challenged by several researchers, who maintain that organizational structure leads to adoption of strategies that are more congruent with existing structures and management systems (for instance, see Certo and Peter, 2005; Hall, 2004).

In this study, we examine the relationship between environmental uncertainty, organizational structure, and strategy using a sample of 76 foreign trade firms registered with the Mersin Chamber of Commerce and Industry. We find that the perceived environmental uncertainty had

increased significantly following the pandemic. While it had no effect on an organization's orientation toward cost leadership strategy, the increase in uncertainty had a positive and significant association with an organization's orientation toward differentiation strategy. Furthermore, we found a positive and significant relationship between structural change in the mechanistic direction and cost leadership strategy. However, we did not find a significant relationship between differentiation strategy and change toward organic organizational structure. Our results also show that the increase in environmental uncertainty did not lead to significant changes in structure. Overall, even though the Covid-19 epidemic raised environmental uncertainty, the study's sample firms did not significantly alter their structure or strategic approach.

The rest of the paper is organized as follows. Next section presents background theory and hypotheses. We then describe our data, measures and method of analysis. Lastly, we present our findings and discuss the implications.

THEORY and HYPOTHESES

Organizations are social structures that are designed to carry out planned and coordinated actions in order to accomplish particular objectives. They function according to a structured framework that involves interactions with both internal and external stakeholders. While managers work to align efforts to reach set objectives, employees interact with one another and with external stakeholders such as customers, suppliers, and competitors. While the organizational structure deals with internal arrangements, organizational strategies concentrate on influencing and responding to the external environment (Daft, 2015).

The features that make up the structure include elements such as the number of management levels, departments, sphere of control, chain of command, division of labor and specialization, level of formalization, degree of centralization, and communication channels. The structure of an organization is considered fixed unless management decides to change it. If a change in structure implies a change in the organization, then as the environment changes, the organization must change to adapt to the environment. In this way, structure is seen as a means to control employee behavior and achieve desired organizational outcomes (Hatch, 2013).

Burns and Stalker (1961) classify organizational structure as mechanistic and organic. Mechanistic structures, which imply predictability and accountability,

are highly formalized with fixed procedures, responsibilities and ways of doing business. These structures involve high centralization with decisions made at the top of the hierarchy, standardized written rules and procedures, position based on prestige and vertical top-down communication. Organic structures, which aim for innovation, adaptability and flexibility, involve complex and high levels of horizontal and vertical integration with authority and control based on task knowledge. There is a low level of formality where tasks and responsibilities are redefined on a case-by-case basis. Moreover, organic structures involve a high degree of decentralization, where decision making power is delegated to those responsible for implementation or those most knowledgeable about the decision, redefinition of tasks through joint problem solving and lateral interaction, and prestige based on expertise and creativity (Hatch, 2013).

Organizations procure scarce resources from their environment to survive. When the supply of resources is disturbed, organizations tend to change their resource procurement strategies to overcome disruptions and continue their operations. In this way, an organization's strategy is influenced by the environment (Burns and Stalker, 1961; Dess and Davis, 1984; Miller and Friesen, 1984). According to Miller and Friesen (1978), organizations in dynamic and uncertain environments have more creative and differentiated strategies. On the other hand, in stable environments where uncertainty is low, a cost leadership strategy may be more effective. This is because the cost leadership strategy focuses on internal efficiency and is preferred by organizations that produce standard goods and services in environments that do not change rapidly. Thus, we argue that firms would tend toward embracing and emphasizing differentiation strategies if they perceive an increase in environmental uncertainty following the Covid-19 pandemic. This logic leads to the following hypotheses:

H1: There is a positive relationship between an increase in perceived environmental uncertainty and strategic reorientation toward differentiation strategy.

H2: There is a negative relationship between an increase in perceived environmental uncertainty and strategic reorientation toward cost leadership strategy.

In order for the organization to achieve its goals, the structural elements of the organization and the organizational strategy must be compatible with each other. If the organization decides to make a change in its strategy, the organization must also be structurally

changed to support this change, as strategy and structure are intertwined. Therefore, different strategies will require different organizational structures (Robbins, 1991). Chandler (1962) stated that if the organization is changing its strategy, the organizational structure should also be changed to support the strategy in order to avoid managerial problems. Miles and Snow (1978) argue that any change in strategy causes managerial problems and therefore organizations should change their structure by shifting to the appropriate structure to eliminate these problems in strategy changes. Miles and Snow (1978) argued that organic structures are ideal for organizations seeking new products, different markets and differentiation of their activities. Due to the low formality of organic structures and centralized information, decision-making and communication, this structure will facilitate the coordination of different and diverse activities. In contrast, a mechanistic structure is ideal for organizations that want to sell their goods at low cost and high price. Through standards, rules and procedures, organizations can keep costs low. According to the results of Miller's study, if the organization is mechanically structured, it will prefer cost leadership strategy and if it is organically structured, it will prefer differentiation strategy (Miller, 1986). This is expressed by the following hypotheses:

H3: There is a negative relationship between strategic reorientation toward differentiation strategy and structural change in the mechanistic direction.

H4: There is a positive relationship between strategic reorientation toward cost leadership strategy and structural change in the mechanistic direction.

Organizations want to develop a harmonious relationship between their internal structure and their environment (Daft, 2015). A stable environment means low uncertainty and predictability. Organizations that operate in an environment with low uncertainty are said to be able to predict customer demands, the time and quantity required by the activity, and raw material supplies. Studies have shown that organizations with this structure are associated with a mechanistic structure, hierarchical and rigid, with vertical communication, where managers design business processes, where power and authority are in top management, and where emphasis is placed on standardization and formalization (Burns and Stalker, 1961). Dynamic environment means high uncertainty and unpredictability. Dynamic environments are associated with organic structures that have organizational flexibility, are less formalized, decentralized, and respond quickly to uncertainty

(Mintzberg, 1979). In summary, structures are considered mechanistic if they are standardized and organic if they are not standardized due to their behaviors that are shaped according to the environment they are in (Burns and Stalker, 1961). According to the literature, organizations change their structures according to the state of the environment in order to adapt to the external environment. In this context, hypothesis H5 is formed as follows:

H5: There is a negative relationship between increase in perceived environmental uncertainty and structural change in the mechanistic direction.

The research model presented by Figure 1 summarizes the conceptual framework and hypotheses of this study. As Figure 1 shows, increase in environmental uncertainty leads to change in strategies which in turn endanger structural change. The model also proposes a direct relationship between environmental uncertainty and organizational structure.

from Mersin port and with an annual export sales amount of more than \$10 million. Companies with export sales of less than \$10 million were excluded because these companies were not involved in international trade on a regular basis, and thus it was not obvious how the pandemic had impacted them. RoRo shipping companies that provide support services for foreign trade, cargo companies focused on non-commercial transport such as documentation and related services, companies engaged solely in storage, port operators, cooperatives, businesses offering measurement and spraying services, tourism service providers, and those specializing in survey and consultancy services were all excluded from the sample. From the remaining pool, the first 100 companies meeting the established criteria were selected. Following initial telephone interviews, 12 companies declined to share information about their operations, 8 companies reported reducing their activities below capacity due to the economic impact of the pandemic, and 4 companies stated they had ceased operations because of the

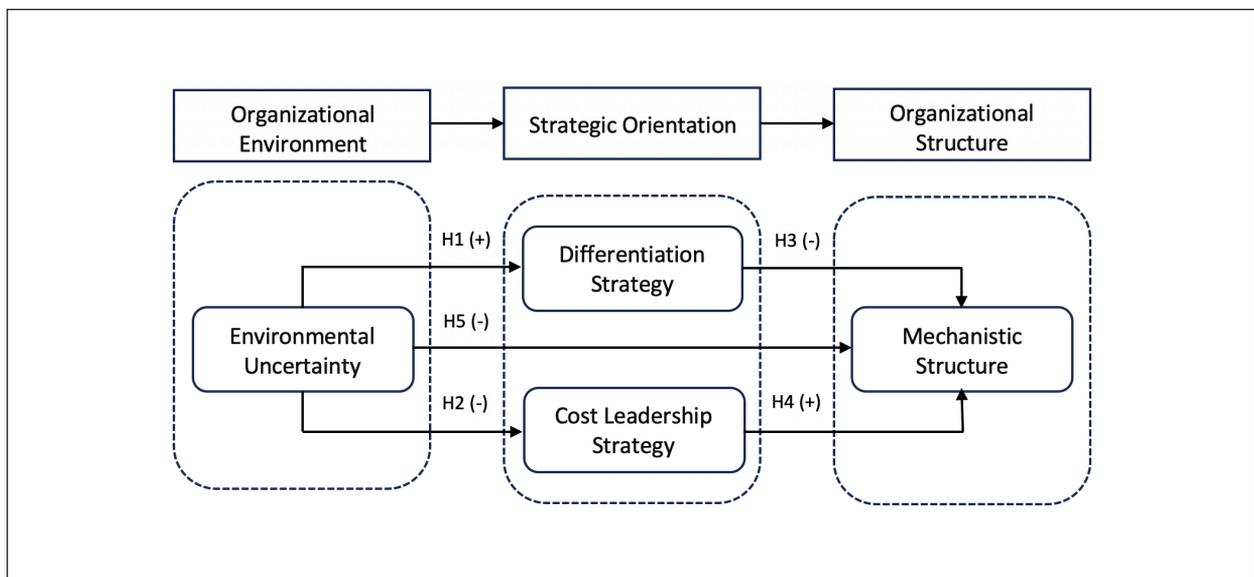


Figure 1: The Research Model

RESEARCH METHOD

The Sample

International trade companies are involved in global trade with firms located overseas. These companies are directly affected by global events and crises that cause disruptions in business and trade. Thus, this study focuses on foreign trade companies located in Türkiye. However, due to time and cost constraints, participating firms were samples from companies registered with the Mersin Chamber of Commerce and Industry in 2019 and ranked in the top 100 in the list of export transactions originating

pandemic. Consequently, after eliminating companies engaged in support services, excluding those unwilling to participate or affected by the pandemic, and enforcing the minimum annual export sales threshold of \$10 million, the final sample consisted of 76 companies. A questionnaire consisting of 40 questions was handed in to individuals knowledgeable about their companies' management processes, strategies, and operations.

The questionnaire consists of a total of 40 questions organized in two sections. The first part included questions about firm characteristics such as size,

operations, sales, and performance. The second part consisted of five-point Likert type questions designed to measure perceived uncertainty, organizational structure and firm strategy. All measures in the second part were answered separately for two time periods; once for the pre-pandemic period and another time for the post-pandemic period.

Main Variables

The main variables of interest of this study include the following: perceived increase in environmental uncertainty, change in mechanistic direction, reorientation toward differentiation strategy and reorientation toward cost leadership strategy. Below, we explain how we measured these variables.

Increase in Perceived Environmental Uncertainty:

This variable measures the increase in perceived environmental uncertainty during the Covid pandemic. Thus, it is calculated by taking the difference between perceived environmental uncertainty during the pandemic and perceived environmental uncertainty before the pandemic. Our variable of increase in environmental uncertainty takes the value of 1 if the difference is positive, and 0 otherwise. Hence, the value of 1 indicates an increase in the perception of environmental uncertainty. We measured perceived environmental uncertainty using a five point-point Likert scale that included 8 items (Çalışkan and Akkoç, 2012; Çetindaş, 2018; Khandwalla, 1979; Milliken, 1987; Waldman et al., 2001; Wong, Boon-ittab and Wong, 2011). The Cronbach's alpha coefficient of this scale is 0.796, indicating sufficient measurement reliability.

Change in Mechanistic Direction: According to contingency theory, organizational structure consists of three main dimensions: formalization, centralization and specialization. Based on these dimensions, Burns and Stalker (1961) divided organizational structures into two categories: mechanistic and organic. While structures with high formalization and centralization but low specialization are identified as mechanistic, structures with low formalization and centralization but high specialization are defined as organic (Hatch, 2013). Following the literature, we used a five-point Likert type scales to measure the three dimensions of organizational structure (Hall, 1991; Pugh, et al., 1968; Sağsan, 2008; Walton, 1991). The Cronbach alpha coefficients for the scales of formalization, centralization, and specialization were 0.75, 0.80, and 0.69, respectively. Each of these measures were then transformed into an indicator of mechanistic structure as follows:

1. Mechanistic-formalization: This indicator takes the value of 1 if a firm's level of formalization is above the sample average, and 0 otherwise.
2. Mechanistic-specialization: This indicator takes the value of 1 if a firm's level of specialization is below the sample average, and 0 otherwise.
3. Mechanistic-centralization: This indicator takes the value of 1 if a firm's level of centralization is above the sample average, and 0 otherwise.

We then added these three indicators to arrive at an overall measure of mechanistic organizational structure, which took values from 0, indicating a low level of mechanistic structure, up to 3, indicating a high level of mechanistic structure. This measure of mechanistic organizational structure was calculated for both the pre-pandemic and the post-pandemic periods. Lastly, to measure the change in the direction of mechanistic structure, we subtracted the level of mechanistic organizational structure in the period before the pandemic from the level of mechanistic organizational structure in the period after the pandemic. Values of this variable, that is, change in the mechanistic direction, can range from -3, indicating change in the direction of organic organizational structure, to +3, indicating change in the direction of mechanistic organizational structure. The middle value of 0 indicates that, overall, there is no change in organizational structure. In our sample, this variable ranges from -2 to 3, indicating a wide variation in how organizational structures were transformed in response to the pandemic.

Change in Strategic Orientation: Porter (1980) stated that firms can gain competitive advantage in a market by following either a cost leadership strategy or a differentiation strategy. Because these strategies are widely used in practice, we assume that the firms in our sample follow either the cost leadership or the differentiation strategy. To measure the extent to which a firm follows one of these strategies, we used five-point Likert scales that have been used and validated in previous works (Karacaoğlu, 2011; Parnell, 2011; Zahra and Covin, 1993; Uçak, 2020). Cronbach's alpha coefficients for cost leadership and differentiation strategies were 0.71 and 0.74, respectively.

As open systems however, organizations strive to develop congruence between their strategies and the environment in which they operate (Daft, 2015). Thus, changes in the environment may necessitate changes in strategy. Because the Covid pandemic generated major

changes within the business environment, we expect that firms in our sample adjusted their strategies accordingly. Thus, we constructed two variables to capture how the firms in our sample changed their strategic orientations. We describe these variables below.

1. *Reorientation toward cost leadership*: This variable was generated by subtracting the value of cost leadership in the pre-pandemic period from the value of cost leadership in the post-pandemic period. A positive difference indicates an increase in a firm's propensity to follow cost leadership strategy, whereas a negative difference indicates a decrease in the firm's propensity to follow cost leadership strategy.
2. *Reorientation toward differentiation*: This variable was generated by subtracting the value of differentiation in the pre-pandemic period from the value of differentiation in the post-pandemic period. A positive difference indicates an increase in a firm's propensity to follow differentiation strategy, whereas a negative difference indicates otherwise.

CONTROL VARIABLES

Level of Diversification: Diversification refers to the expansion of a firm into new product markets. Thus, the level of diversification is the extent to which a firm operates in multiple product markets (Burns and Stalker, 1961; Miles and Snow, 1978; Mintzberg, 1979). This variable was measured by asking respondents to select from a list all product market activities (logistics activities and services) in which their organization was involved. The list involved eight product market activities within the logistics and foreign trade sector. These activities included road transportation, maritime transportation, railway transportation, air cargo transportation, producer/import-export, forwarder, agency services, and customs services. We measured the level of diversification by the number of logistics activities and services reported by respondents.

Firm Size: Some studies examining changes in organizational structure and the content of strategies have found that size is related to changes in strategies (Birnbaum, 1984; Zajac and Kraatz, 1993). Fombrun and Ginsberg (1990) found a negative relationship between size strategy change. Other researchers have found that size has no effect on structure or strategy (Kelly and Amburgey, 1991; Ginn, 1990; McCutchen, 1993). Since firm size has been included in studies on structure and

strategy, it was included as another control variable in this study. In this study, we measured a firm's size using four size categories that were determined on the basis of the number of employees working for the firm. According to the Regulation on the Definition, Qualifications and Classification of Enterprises published in the Official Gazette of the Republic of Türkiye dated June 24, 2018, and numbered 30458, firms are classified into four size categories based on the number of people they employ. Specifically, firms with less than 10 employees are classified as micro enterprises; firms employing 11-49 employees are classified as small enterprises; firms employing 50-249 employees are classified as medium-sized enterprises, and firms with 250 or more employees are classified as large enterprises. In our paper, we employed the official classification in Türkiye to measure firm size in four categories.

Firm Age: While age increased the magnitude and probability of change in some studies (Boeker, 1989), it decreased the probability of change in other studies (Kelly and Amburgey, 1991) and increased the time taken for change. According to adaptation approaches, including contingency theory, while organizations are influenced by their structure and strategies to adapt to the environment, size and age are also environmental factors. Thus, we control for firm age in our analysis. Based on the life cycle studies of companies, the average life expectancy is shown in the literature to be 12.5 years regardless of company size. Accordingly, companies that have been in operation for a period of 1-5 years are defined as young; companies that have been in operation for 6-10 years are defined as mature; and companies that have been in operation for more than 10 years are defined as old. Hence, firm age is a categorical variable that takes three values: 1 if the firm is young, 2 if the firm is mature, and 3 if the firm is old.

METHOD of ANALYSIS

We used the ordinary least squares regression with heteroskedasticity robust standard errors to test hypotheses 1 and 2, which are about the relationship between increase in perceived environmental uncertainty and change in strategy. To test hypotheses 3, 4, and 5 we used the ordered logit regression method because the dependent variable in these hypotheses is categorical with clear ordering between the categories. All regression analyses were performed using Stata. Lastly, we interviewed several managers with significant experience in the logistics and foreign trade sector to better interpret our regression results and hypotheses that we were unable to support.

Table 1: Summary Statistics

Variable	Obs.	Mean	Std. Dev	Min	Max
Increase in perceived environmental uncertainty	75	0.627	0.487	0	1
Change in mechanistic direction	73	0.055	0.468	-2	3
Reorientation toward cost leadership	74	-0.036	0.454	-1.33	1
Reorientation toward differentiation	72	-0.005	0.365	-1.33	1
Level of diversification	76	2.447	1.976	1	7
Firm Size	76	2.855	1.042	1	4
Firm Age	76	2.553	0.790	1	3

FINDINGS

Table 1 presents the summary statistics for the variables in the study. The data indicate that 62.7% of the sample firms perceived an increase in environmental uncertainty during the Covid-19 pandemic. Regarding organizational changes, the mean score for a change in a mechanistic direction was 0.06, suggesting a very slight overall shift toward more mechanistic structures. Similarly, the strategic reorientation variables show minimal mean changes, with a slight tendency toward cost leadership (mean = -0.036) over differentiation (mean = -0.005). This indicates that, on average, firms in the sample made only negligible adjustments to their strategies following the pandemic. For the control variables, the average level of diversification was 2.5, implying that the typical firm operates between two and three distinct business lines. The average firm age was 2.6, which, based on our coding, corresponds to firms that are at least six years old. Finally, the mean firm size was 2.9, suggesting the sample is primarily composed of small to medium-sized enterprises, with employee numbers typically falling within the range of 10 to 249.

Table 2 presents the Pearson correlations among the study variables. The analysis reveals a positive, moderate correlation between the perceived increase in environmental uncertainty and reorientation toward a differentiation strategy ($r = 0.31$). The change in

mechanistic direction shows a positive, moderate correlation with reorientation toward differentiation strategy ($r = 0.42$) and a weaker positive correlation with reorientation toward cost leadership strategy ($r = 0.20$). In contrast, the perceived increase in environmental uncertainty demonstrates negligible correlations with both the change in mechanistic direction ($r = 0.03$) and reorientation toward cost leadership ($r = 0.00$). Regarding the control variables, the level of diversification shows weak positive correlations with the perceived increase in environmental uncertainty ($r = 0.16$) and reorientation toward differentiation ($r = 0.14$), and weak negative correlations with the change in mechanistic direction ($r = -0.10$) and reorientation toward cost leadership ($r = -0.05$). Firm size exhibits weak positive correlations with the perceived increase in environmental uncertainty ($r = 0.16$) and the level of diversification ($r = 0.17$), while its correlations with other main variables are negligible. Firm age shows a weak negative correlation with the level of diversification ($r = -0.25$) and a positive correlation with firm size ($r = 0.39$), while its relationships with all other main variables are negligible.

Table 3 presents the results of the ordinary least squares regressions used to test Hypothesis 1 and Hypothesis 2. Model 1 presents the regression results when reorientation toward cost leadership is the dependent variable. Model 2 presents results when reorientation toward differentiation is the dependent variable.

Table 2: Correlations

	[1]	[2]	[3]	[4]	[5]	[6]
[1] Perceived increase in environmental uncertainty	1.00					
[2] Change in mechanistic direction	0.03	1.00				
[3] Reorientation toward cost leadership	0.00	0.20	1.00			
[4] Reorientation toward differentiation	0.31	0.42	0.38	1.00		
[5] Level of diversification	0.16	-0.10	-0.05	0.14	1.00	
[6] Firm Size	0.16	-0.06	0.01	-0.01	0.17	1.00
[7] Firm Age	-0.02	0.14	0.02	0.07	-0.25	0.39

Note: Correlations higher than 0.20 are significant at the 10% level.

Table 3: Ordinary Least Squares Regression Results

Independent variables	Model 1		Model 2	
	Dep. Var.: Reorientation toward differentiation		Dep. Var.: Reorientation toward cost leadership	
	Coef.	p-value	Coef.	p-value
Perceived increase in env. uncertainty	0.232	0.008	0.005	0.962
Level of diversification	0.028	0.139	-0.012	0.678
Firm age	0.079	0.140	-0.001	0.993
Firm size	-0.054	0.187	0.007	0.922
Constant	-0.266	0.131	-0.028	0.91
Num. of observations	72		74	
F test	2.73	0.049	0.06	0.99
R-square	0.13		0.00	
Adj. R-square	0.08		0.00	

Note: p-values are based on heteroskedasticity-robust standard errors.

Hypothesis 1 proposed a positive relationship between perceived increase in environmental uncertainty and strategic reorientation toward differentiation strategy. The results support this hypothesis, indicating a statistically significant and positive relationship ($b = 0.23$; $p = 0.008$). This finding suggests that in dynamic environments characterized by higher uncertainty, organizations are more inclined to pursue differentiation strategies. The control variables (level of diversification, firm age, and firm size) were not statistically significant in Model 1. Hypothesis 2 proposed a negative relationship between perceived increase in environmental uncertainty and strategic reorientation toward cost leadership strategy. The results do not support this hypothesis. The relationship is not statistically significant and is close to zero ($b = 0.005$; $p = 0.962$). Therefore, Hypothesis 2 is rejected. Similarly, in this model, none of the control variables are statistically significant.

Table 4 displays the findings from the ordered logit regression analysis, which was conducted to test Hypotheses 3, 4, and 5. Hypothesis 3 proposed a negative relationship between strategic reorientation toward a differentiation strategy and structural change in a mechanistic direction. Contrary to this expectation, the analysis revealed a significant positive relationship between an orientation toward differentiation strategy and mechanistic structural change ($b = 6.32$; $p = 0.008$). Therefore, Hypothesis 3 is rejected. Hypothesis 4 suggested a positive relationship between strategic reorientation toward a cost leadership strategy and structural change in the mechanistic direction. However, the results indicate a significant negative relationship between cost leadership strategy orientation and mechanistic change ($b = -2.07$; $p = 0.001$), leading to the rejection of Hypothesis 4. Hypothesis 5 posited a negative relationship between increased perceived

Table 4: Ordinal Logistic Regression Results

	Coef.	Robust std. err.	p-value
Perceived increase in env. uncertainty	-0.122	1.307	0.926
Reorientation toward differentiation	6.324	2.390	0.008
Reorientation toward cost leadership	-2.066	0.639	0.001
Level of diversification	-0.180	0.428	0.674
Firm age	1.454	0.973	0.135
Firm size	-1.193	0.401	0.003
cut1	-8.138	2.095	
cut2	4.823	2.329	
cut3	6.216	2.134	
Num. of observations	72		
Wald Chi-square	19.33		0.0036
Pseudo R-square	0.32		

Note: p-values are based on heteroskedasticity-robust standard errors.

environmental uncertainty and mechanistic structural change. The analysis showed no significant relationship between increased environmental uncertainty and mechanistic change, despite the direction being negative ($b = -0.12$; $p = 0.93$). Thus, Hypothesis 5 is also rejected. Among the control variables, only firm size was found to be negatively and significantly associated with changes in the mechanistic direction.

LIMITATIONS

The primary limitation of this study is the sample size. The final sample comprised only 76 companies. This reduction was due to several factors: some companies registered with the Mersin Chamber of Commerce and Industry declined to participate or provide operational information, while others operated below capacity or had ceased operations entirely because of the pandemic. As a result, the sample size was not sufficient to conduct high-powered statistical analyses. Nevertheless, a sample of 76 is sufficient to identify general trends, though it restricts the ability to perform comprehensive statistical analyses.

Another limitation concerns the scope of company selection. To ensure accessibility, the study focused exclusively on firms registered with the Mersin Chamber of Commerce and Industry and conducting foreign trade through Mersin Port. This approach excluded companies operating in other Turkish ports. Future research could address this limitation by expanding the scope to include firms utilizing additional ports such as Ambarlı, Marport, Kumport, Yılport, and Aliağa, thereby providing a broader perspective.

Sector selection represents an additional constraint. The current research is limited to the firms in the logistics and foreign trade sector, which, while relevant, does not capture the pandemic's impact across other sectors. Since the pandemic is a global crisis affecting a wide range of industries, future studies could enhance sector diversity or even adopt a global scope to increase the study's relevance and generalizability.

Finally, the reliability of some scales used in the study presents a limitation. The Cronbach's alpha coefficient, which indicates scale reliability, should be at least 0.70. In this study, the specialization scale achieved a value of 0.69, marginally below the accepted threshold. While this small difference is unlikely to significantly affect the results, it is nonetheless noted as a limitation. For future research, increasing the number of statements in the specialization scale may help achieve a higher reliability score.

DISCUSSION and CONCLUSION

Contingency theory asserts that there is no single best way to organize a business. The most suitable organizational design depends on both the internal and external circumstances facing the organization (Burns and Stalker, 1961). During crisis periods, organizations experience many transformations as they respond to sudden changes in their environment. Typically, organizations first perceive the crisis, then pause to observe the situation, and finally formulate a response. However, not every organization may have the structure to respond effectively, or may not see the need to do so based on self-reflection.

According to the literature, organizations facing sudden change tend to adjust their strategies for external challenges and their structures for internal ones. This means that achieving alignment between strategy and structure becomes essential. The present study examines whether contingency theory (based on the principle that organizations, as dynamic economic and social units, react to sudden changes in their environment) applies to Turkish Foreign Trade enterprises during the Covid-19 pandemic, a period of global crisis. Specifically, it investigates how the pandemic affected the strategies and policies of these Turkish firms.

Regression analysis of the relationship between strategy changes and increased environmental uncertainty found a positive link between adopting a differentiation strategy and heightened uncertainty. However, no negative relationship was found between moving to a cost leadership strategy and increasing uncertainty, contrary to expectations. This suggests that as environmental uncertainty increases, companies in the study sample are more likely to adopt a differentiation strategy. This finding supports the literature (Burns and Stalker, 1961; Miller and Friesen, 1978; Miller and Friesen, 1984; Porter, 1980), which indicates that organizations turn to differentiation in times of heightened uncertainty. However, since the hypothesis was rejected, the study does not fully support previous literature. Interviews with managers reveal that, despite high market uncertainty, companies experienced excessive profitability due to soaring prices driven by steady supply and increased demand. As a result, organizations did not prioritize cost control or feel compelled to change their strategies. The lack of strategy change led to inconclusive analysis results. The significant finding in the analysis, despite unchanged strategies, is explained by the fact that, during the pandemic, low supply and high demand for shipping containers allowed companies to sell available

space at premium prices. Companies then used their ability to secure container space as a way to differentiate themselves from competitors.

The analysis also found no negative relationship between rising environmental uncertainty and a shift toward a more mechanistic organizational structure. This means that increased uncertainty did not prompt organizations in the sample to change their structures. The relevant literature (Burns and Stalker, 1961; Mintzberg, 1979) suggests that predictable, low-uncertainty environments warrant a mechanistic structure with high formality and centralization, while dynamic, high-uncertainty environments require an organic structure with less formality and more flexibility. However, the sample showed no such effect, largely because, as shown in Table 1, there was no significant change in structure or strategy. Interviews confirmed that organizations saw no need to change, mainly due to high profits from surging prices. Some organizations did restrict authority to top management, while others increased employee autonomy to reduce complexity and speed up work. This two-way trend may explain the lack of clear results in the analysis.

In examining the link between strategy changes and organizational structure shifts, the study expected a negative relationship between adopting a differentiation strategy and mechanistic changes, but instead observed a significant positive relationship in the opposite direction. Similarly, while a positive relationship was anticipated between cost leadership and mechanistic changes, a significant negative relationship appeared. The literature (Miles and Snow, 1978; Nystrom et al., 2002; Robbins, 1991) posits that a shift to differentiation strategy should lead to an organic structure, and cost leadership should result in a mechanistic structure. This study's findings were the opposite. Interviews with managers revealed that while strategies remained constant, some organizations made slight moves toward organic structures. Thus, the main conclusion is that, in this sample, structure does not follow strategy. Although some organizations became more organic and maintained their differentiation strategies after the pandemic, there was no evidence that strategy changes drove structural shifts. Instead, when structure did change, it tended to align with existing strategies, in line with the literature (Chandler, 1962; Miles and Snow, 1978). Therefore, if a mismatch arises between strategy and structure, organizations naturally try to align them with environmental realities, even if not done consciously.

The study also found that organizations tending toward a mechanistic structure after the pandemic also leaned toward cost leadership strategies. The literature generally holds that mechanistic structures best support cost leadership, while organic ones support differentiation. However, this study found no correlation between a move toward organic structure and differentiation strategy, possibly because organizations already had a differentiation focus before the pandemic and did not change it afterward. Thus, significant results are not expected where there is no change. Some companies shifted to more flexible (organic) structures during the pandemic without changing their strategies, while others became more mechanistic and still maintained a differentiation strategy. In other words, changes in the degree of mechanistic structure did not reduce the tendency toward differentiation strategy. The trend was for companies with pre-existing differentiation strategies to become slightly more organic, but strategy remained unchanged. Consequently, the idea that structure follows strategy is not supported in this case, since strategies did not change.

The pandemic period proved positive for Turkish Foreign Trade companies in the sample, with no major changes observed in their quantitative results. Interviews indicated that extraordinary profitability, thanks to a shift in global trade to Türkiye, removed the perceived need for change. This suggests that, even in a crisis, organizations may choose not to change if their bottom line is positively affected. According to the study, not every crisis leads to changes in organizational structure or strategy. Hybrid work arrangements in these organizations were required by the government, while tactical strategy adjustments were based on performance. Since market prices increased on their own, organizations did not see change as necessary. Thus, financial performance (profitability) was the main factor discouraging strategy changes, while hybrid work was a government mandate.

Another finding is that organizational structure and strategies did not mutually trigger changes in each other. For example, even though some organizations changed their structures, their strategies remained the same. This suggests that external factors, rather than internal interactions between strategy and structure, drive change. The main factor behind observed changes was profitability, as soaring prices led to unexpectedly high profits, removing any perceived need for change.

While crises inevitably create uncertainty, the extent of organizational change depends on the situation. This study concludes that not every crisis leads to major

changes, and organizations are reluctant to make radical adjustments. Instead, they favor tactical, incremental changes that help them adapt without disrupting the organization. Both quantitative analysis and interviews show that the companies studied made only small, tactical changes during the pandemic, rather than major structural or strategic shifts.

In summary, the study found that the Covid-19 pandemic did not cause significant or lasting changes in the structure or strategies of Turkish foreign trade companies, with high profitability being the primary reason. The main driver of change for organizations is financial performance. As long as organizations maintain or increase sales and market share, they perceive no need to change structure or strategy. Therefore, if these organizations face similar crises in the future, their focus will likely be on maintaining financial performance, rather than seeking change.

This study provides insights for business managers and policymakers on managing uncertainty during crises. One key finding is that businesses tend to favor tactical and operational solutions over radical strategic changes in times of crisis. Quick, flexible, and low-cost responses are more feasible for managers. Additionally, it was observed that, depending on circumstances, organizations may either centralize authority (mechanistic structure) or delegate it and become more flexible (organic structure). This serves as guidance for managers on what organizational structure may be most effective in future crises.

It was also found that businesses are unlikely to change strategies during periods of high profitability, suggesting that managers should weigh both external conditions and the company's financial health when making decisions. Additionally, during crises, businesses prioritize cash flow and short-term operational sustainability. Therefore, government agencies and regulators should consider designing support packages that provide short-term financial relief and operational support, rather than focusing solely on long-term structural transformation.

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