

Article

From Balance to Switching: How Sequential Ambidexterity Shapes SME Recovery in Crisis

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Abstract

This study investigates the strategic responses associated with small- and medium-sized enterprise (SME) recovery under crisis conditions. Rather than assuming that maintaining ambidexterity is universally beneficial, it questions whether the balance between exploration and exploitation remains effective when firms face severe resource constraints and heightened uncertainty. Using panel data on Korean SMEs from 2019 to 2023, this study compares the performance implications of ambidexterity balance and strategic switching, identifies which firms are more likely to undertake strategic switching, and examines how post-switch recovery patterns unfold over time. The findings indicate that the performance implications of ambidexterity balance weaken during the crisis period and, in some cases, become negative, whereas strategic switching is associated with more favorable recovery patterns during the crisis period. In addition, the benefits of strategic switching do not emerge immediately but instead become gradually visible over two to three years following the initial switch, highlighting the importance of post-switch adaptation time.

Keywords: sequential ambidexterity; strategic switching; crisis management; small- and medium-sized enterprises (SMEs)

1. Introduction

Firms increasingly operate in environments characterized by discontinuous change, heightened uncertainty, and frequent external shocks. Under such conditions, sustaining competitive advantage and long-term survival requires firms not only to exploit existing knowledge and capabilities efficiently but also to explore new opportunities and adapt to emerging demands (March, 1991; O'Reilly & Tushman, 2013). This challenge has been extensively discussed in the organizational ambidexterity literature, which argues that firms benefit from balancing exploration and exploitation. Prior studies have generally suggested that a more balanced configuration of the two activities can enhance innovation and performance by allowing firms to maintain current efficiency while creating future growth options (Cao et al., 2009; Gibson & Birkinshaw, 2004; He & Wong, 2004; Junni et al., 2013; Mathias et al., 2018; Kassotaki, 2022). However, the benefits of ambidexterity balance may not remain constant across organizational contexts (Belderbos et al., 2010; Mathias et al., 2018). Under relatively stable conditions, maintaining a balance between exploration and exploitation may improve performance by enabling firms to preserve current viability while preparing for future growth. Yet, the value of such balance may become attenuated,



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or even reversed, under crisis conditions. Simultaneously maintaining exploration and exploitation is both costly and difficult, particularly for small and medium-sized enterprises (SMEs) operating under severe resource constraints (Hu et al., 2023; Lubatkin et al., 2006; O'Reilly & Tushman, 2013; Wenke et al., 2021). These challenges become more acute during crises such as the COVID-19 pandemic, when uncertainty intensifies, slack resources shrink, and immediate survival pressures dominate managerial attention (Hillmann & Guenther, 2021; O'Reilly & Tushman, 2008). In such contexts, maintaining balanced investments across both exploratory and exploitative activities may impose additional coordination burdens, disperse scarce resources, and hinder rapid organizational response (Raisch & Birkinshaw, 2008; O'Reilly & Tushman, 2013; Wenke et al., 2021).

From a resilience perspective, effective crisis response depends not merely on the possession of resources, but on a firm's ability to anticipate disruptions, cope with on-going shocks, and adapt through subsequent adjustment and learning (Duchek, 2020; Hillmann & Guenther, 2021). This perspective suggests that the performance implications of ambidexterity balance may become less favorable under crisis conditions.

An alternative perspective is offered by sequential ambidexterity, which emphasizes temporal separation rather than simultaneous balance (Duncan, 1976; O'Reilly & Tushman, 2013). Prior research further suggests that firms may develop temporal switching capability, referring to their ability to effectively transition between exploration and exploitation over time (Chou et al., 2018). Instead of pursuing exploration and exploitation concurrently, firms may concentrate resources on one strategic orientation for a period of time and subsequently shift toward another orientation as environmental conditions evolve. This temporal logic may be particularly relevant for SMEs, for which structural separation or simultaneous ambidexterity is often too costly to sustain. Accordingly, the key issue during crises may not be whether firms maintain an optimal balance at a single point in time, but whether they can reorient their strategic emphasis at the appropriate time and accumulate sufficient post-switch adjustment. This argument is closely related to the perspectives of dynamic capabilities and resource orchestration, which emphasize that competitive adaptation depends not simply on possessing balanced resources, but on the ability to reconfigure and redeploy resources in ways that fit changing environmental demands (Teece et al., 1997; Sirmon et al., 2007; O'Reilly & Tushman, 2008). Consequently, what matters under crisis conditions may not be balance itself, but the timing and sequence of strategic reconfiguration. From this perspective, ambidexterity can be understood not only as simultaneity, but also as sequentiality.

Despite these insights, existing research leaves two important gaps. First, much of the ambidexterity literature has focused on the performance benefits of balancing exploration and exploitation under relatively stable conditions, while paying comparatively limited attention to whether such balance remains an effective strategic approach under crisis conditions characterized by severe resource constraints and heightened uncertainty. Second, although the importance of sequential ambidexterity has been increasingly recognized, empirical evidence remains limited regarding how strategic switching contributes to post-crisis recovery performance. In particular, relatively little is known about whether the effects of ambidexterity balance and strategic switching differ across pre-crisis, during-crisis, and post-crisis phases.

Building on these gaps, this study investigates how maintaining ambidexterity balance and engaging in strategic switching are associated with firms' recovery performance under crisis conditions. Whereas prior research has primarily emphasized the benefits of balancing exploration and exploitation, crisis contexts may require firms to prioritize strategic reorientation and resource reallocation over maintaining simultaneous balance. Accordingly,

this study examines whether maintaining ambidexterity balance and engaging in strategic switching have differential effects on firm recovery performance during crisis periods.

In addition, this study explores the temporal mechanism through which the performance effects of strategic switching emerge. Strategic switching involves not only a discrete strategic decision, but also subsequent processes of organizational learning, resource reallocation, operational adjustment, and market adaptation. Therefore, its effects may not materialize immediately at the point of transition, but instead emerge cumulatively after a period of post-switch adaptation. Accordingly, this study investigates whether the performance effects of strategic switching appear immediately after the transition or gradually strengthen through post-switch organizational adjustment and reconfiguration processes over time.

To address these questions, this study employs panel data on Korean SMEs from 2019 to 2023 to examine the phase-contingent relationship between ambidexterity balance, strategic switching, and sales recovery. Specifically, the study compares how the performance implications of maintaining ambidexterity balance and engaging in strategic switching vary across pre-crisis, during-crisis, and post-crisis periods, thereby providing a more dynamic understanding of organizational recovery mechanisms under crisis conditions.

2. Theoretical Framework

This section begins by defining ambidexterity balance as the relative alignment between exploration and exploitation within the broader theoretical framework of organizational ambidexterity, and by reviewing the theoretical mechanisms through which such balance has been linked to firm performance. It next discusses how, under crisis conditions, heightened uncertainty, resource constraints, and increased coordination costs may weaken the effectiveness of maintaining a static balance. Against this backdrop, sequential ambidexterity and temporal switching are presented as alternative adaptive mechanisms, emphasizing the need for firms to recalibrate the perceived strategic emphasis placed on exploration and exploitation over time. Finally, this section provides the theoretical foundation for the present study by suggesting that, in crisis contexts, the timing and sequence of strategic switching may become more consequential managerial concerns than maintaining balance between exploration and exploitation in and of itself.

2.1. Organizational Ambidexterity Balance

Organizational ambidexterity generally refers to an organization's ability to simultaneously pursue exploration and exploitation. Exploration encompasses activities related to the search for new opportunities, experimentation, discovery, autonomy, and innovation, whereas exploitation refers to activities aimed at enhancing efficiency, control, certainty, and variance reduction based on existing assets and capabilities. March (1991) distinguished exploitation as activities associated with efficiency, control, certainty, and variance reduction, while defining exploration as activities involving search, experimentation, discovery, autonomy, and innovation. He further argued that a fundamental adaptive challenge for organizations is to engage in sufficient exploitation to ensure current viability while simultaneously sustaining sufficient exploration to secure future viability.

However, these two activities require different resources, organizational structures, and managerial logics, and they inevitably compete for scarce managerial and organizational resources. Consequently, excessive emphasis on either activity may undermine firm performance. Maintaining an appropriate balance between exploration and exploitation therefore plays an important role in mitigating the negative consequences associated with over-exploration and over-exploitation, while also creating synergies that cannot be achieved through either activity alone.

March's (1991) argument established the notion that organizations must manage the tensions between exploration and exploitation in order to survive and adapt over the long term. Building on this foundation, Tushman and O'Reilly (1996) explicitly developed the concept of organizational ambidexterity. Drawing on examples of firms that had sustained long-term survival and organizational renewal, they argued that organizations must achieve an ambidextrous balance that enables them to pursue both exploration and exploitation simultaneously in order to secure long-term competitive advantage. Furthermore, they defined organizational ambidexterity as an organization's ability to simultaneously accommodate conflicting structures, processes, and cultures within the same organization so as to pursue both incremental and discontinuous innovation, and viewed this capability as essential for long-term organizational survival and growth.

Accordingly, organizational ambidexterity balance should be understood not as the extent to which organizations intensively pursue both exploration and exploitation, but rather as the degree to which they maintain a harmonious relative emphasis between the two activities within a given period (He & Wong, 2004; Lubatkin et al., 2006; Tushman & O'Reilly, 1996). In other words, ambidexterity balance refers to the degree of within-period relative alignment between exploration and exploitation at a specific point in time or within a given period, reflecting how organizations allocate managerial attention and resources to avoid excessive reliance on either activity (Cao et al., 2009).

2.2. Organizational Ambidexterity Balance Under Crisis Conditions

Early research on organizational ambidexterity argued that maintaining a balance between exploration and exploitation positively influences firm performance. In particular, He and Wong (2004) empirically demonstrated that firms simultaneously pursuing exploratory and exploitative innovation exhibit higher sales growth, whereas imbalances between the two activities negatively affect performance. Their findings suggest that the value of ambidexterity lies not merely in conducting both activities concurrently, but in functioning as a balancing mechanism that effectively coordinates the relationship between exploration and exploitation so that firms can simultaneously secure current viability and future adaptability.

Subsequently, Cao et al. (2009) refined the concept of ambidexterity by distinguishing between balance and combined dimensions. They defined the balance dimension as the degree of relative alignment between exploration and exploitation, and the combined dimension as the overall magnitude of the two activities. In particular, they argued that the balance dimension contributes to firm performance by mitigating performance risk. This is because excessive reliance on exploitation may increase the risk of technological and market obsolescence, whereas excessive emphasis on exploration may weaken the firm's ability to appropriate returns from innovation.

However, it is difficult to assume that the performance effect of ambidexterity balance is identical across all contexts. O'Reilly and Tushman (2013) acknowledged that organizational ambidexterity is generally associated with positive performance outcomes, while also highlighting conceptual and contextual variations in interpreting this relationship. Likewise, the meta-analysis conducted by Junni et al. (2013) reported an overall positive relationship between organizational ambidexterity and firm performance, but suggested that the strength of this relationship varies according to differences in conceptualization, measurement approaches, and contextual conditions. In other words, although ambidexterity balance is generally regarded as a desirable organizational state, it does not necessarily guarantee the same level of performance under all circumstances.

In particular, the effectiveness of ambidexterity balance is likely to diminish under crisis conditions. Crises are accompanied by heightened uncertainty and intensified adap-

tive pressures, requiring firms to respond rapidly to changing environmental demands (Hillmann & Guenther, 2021). At the same time, because exploration and exploitation involve competing resource and organizational demands, maintaining a balance between the two can generate substantial coordination burdens (Raisch & Birkinshaw, 2008). Moreover, because exploration and exploitation rely on different principles of resource allocation, decision-making criteria, and operating routines, maintaining balance requires sufficient coordination capacity, resource availability, and organizational integration mechanisms (O'Reilly & Tushman, 2013). Yet these very managerial resources and organizational slack tend to be most constrained during crises. Consequently, attempts to maintain balance may instead disperse managerial attention, fragment scarce resources across multiple activities, and delay rapid decision-making processes (Wenke et al., 2021; O'Reilly & Tushman, 2013). In other words, under crisis conditions, the coordination costs associated with maintaining ambidexterity balance may outweigh its expected benefits (Raisch & Birkinshaw, 2008; Wenke et al., 2021).

From this perspective, the central challenge during crises is not simply to pursue exploration and exploitation simultaneously. Rather, it becomes increasingly important to determine which activity should be prioritized and how limited resources should be reallocated in response to changing environmental demands. The resource orchestration perspective argues that competitive advantage stems not from resource possession itself, but from how resources are structured, bundled, and leveraged (Sirmon et al., 2007, 2011). Accordingly, under conditions of heightened uncertainty, dynamically redeploying, recombining, and realigning resources in response to changing environmental demands may be more important than maintaining a stable balance in resource allocation. Put differently, while ambidexterity balance may contribute to performance improvement under normal conditions, it may instead hinder organizational adaptation and recovery during crises by increasing resource dispersion and coordination burdens. This line of reasoning suggests that static balance logic alone is insufficient to explain organizational performance under crisis conditions and highlights the need to pay greater attention to more flexible mechanisms of strategic switching.

2.3. Sequential Ambidexterity and Temporal Switching

Early discussions of organizational ambidexterity focused on an organization's ability to manage the tension between exploration and exploitation (March, 1991), but such management does not necessarily have to occur simultaneously. Because exploration and exploitation require different skills, processes, and performance evaluation systems, pursuing them concurrently can inevitably generate competition for resources and intra-organizational conflicts (Birkinshaw & Gupta, 2013; Chou et al., 2018; Marabelli et al., 2012; March, 1991).

This perspective can be traced back to Duncan's (1976) early work. Duncan (1976) argued that ambidexterity could be achieved through temporal shifts in organizational structures, emphasizing that the initiation and implementation stages of innovation require different organizational structures and managerial approaches. Subsequently, Tushman and Romanelli (1985) introduced the concept of temporal separation and explained that firms evolve through punctuated changes by sequentially realigning organizational structures and processes in response to environmental changes. In particular, firms that survive periods of radical or discontinuous environmental change cannot rely solely on incremental and continuous improvements but instead require fundamental organization-wide transformations (Cyert & March, 1963; Romanelli & Tushman, 1994). Once environmental shocks subside, however, firms must regain the capacity to resume incremental and continuous

change. Therefore, these two perspectives should be viewed not as mutually exclusive but as complementary explanations of ambidexterity operating at different temporal levels.

Building on these arguments, recent studies have increasingly highlighted sequential ambidexterity as an alternative to simultaneous ambidexterity. Sequential ambidexterity emphasizes a cyclical approach in which firms focus on one activity for a certain period before switching to the other, rather than pursuing exploration and exploitation concurrently (Gupta et al., 2006). O'Reilly and Tushman (2013) likewise argued that ambidexterity can be achieved not only through structural separation or simultaneous pursuit but also through a sequential approach that shifts the strategic emphasis between exploration and exploitation over time.

A critical element of this process is the capability to switch from exploratory activities to exploitative activities, or vice versa (Mudambi & Swift, 2011). Gupta et al. (2006) introduced the concept of temporal switching capability, and Chou et al. (2018) further conceptualized it as a firm's capability to switch smoothly from one phase to another. Through temporal separation, organizations can allocate resources more intensively and efficiently by focusing on exploration during certain periods and exploitation during others.

This process becomes particularly important under crisis conditions. In crisis environments, the central managerial challenge may no longer be how to maintain a balance between exploration and exploitation, but rather when and to which activity priority should be assigned. In other words, organizational performance may depend less on balance per se than on the timing and sequence of strategic switching. Indeed, prior studies suggest that in environments where the value of existing competencies rapidly deteriorates, strategically switching between exploration and exploitation, or repeatedly oscillating between the two, can contribute to long-term performance improvement (Laplume & Dass, 2010; Boumgarden et al., 2012).

Recent studies have further emphasized the importance of environmental awareness and adaptive capability under crisis conditions. Limaj et al. (2026) showed that organizational alertness during the COVID-19 pandemic was an important antecedent that distinguished whether firms adopted exploration, exploitation, or ambidextrous crisis strategies. This suggests that crisis management is not simply a matter of possessing resources but is closely associated with an organization's ability to detect environmental changes early and determine which strategic focus should be prioritized. Likewise, Reed (2021) demonstrated that under conditions of temporary turbulence, such as the COVID-19 pandemic, strategic changes do not necessarily need to be long-term, and firms can rapidly adjust their strategic focus according to the expected duration of the crisis. Together, these findings suggest that sequential ambidexterity is not merely a matter of long-term structural transitions but rather a dynamic process of adjusting strategic emphasis in accordance with the temporal characteristics of environmental change.

Sequential ambidexterity may be particularly useful for small- and medium-sized enterprises (SMEs), which often lack the resources required to operate ambidexterity through dedicated organizational structures. Because SMEs may find it difficult to maintain separate organizational structures and management systems for simultaneously pursuing exploration and exploitation, they are more likely to adopt temporal separation by concentrating resources on one activity at a particular point in time (Lubatkin et al., 2006). Such an approach enables more efficient utilization of limited resources (Cao et al., 2009) and may therefore represent a more realistic response strategy under crisis conditions.

3. Research Methods

3.1. Data

This study utilizes data from the Survey on Technology of SMEs. The survey is conducted annually on approximately 4000 small and medium-sized enterprises (2665 manufacturing firms and 1335 non-manufacturing firms) that engage in technological development. It provides comprehensive information on firm's R&D activities and investments, organizational structures and human resources for technology development, technological capabilities and competitiveness, as well as innovation outcomes.

For this study, we construct a panel dataset by selecting firms that are repeatedly observed over time and merging their observations for the period from 2019 to 2023. The panel is unbalanced, as the number of observations varies across years. This structure reflects entry and exit of firms or missing responses over time, which is typical in firm-level survey data.

The sample includes a total of 1815 firm-year observations across five years (Table 1). The dataset has the distinctive feature of spanning the period before, during, and after COVID-19. Since COVID-19 began in 2020 and was officially declared to have ended in 2022, this study classifies 2019 as the pre-COVID period, 2020–2022 as the during-COVID period, and 2023 as the post-COVID period.

Table 1. Observations.

Year	Freq.
2019	400
2020	335
2021	328
2022	352
2023	400
Total	1815

3.2. Hypothesis

Under crisis conditions, external shocks—such as demand contraction, financial constraints, and instability in exchange relationships—occur simultaneously, depleting the financial and operational resources available to firms. Concurrently, diminishing market predictability and escalating volatility in technological and competitive landscapes heighten environmental uncertainty. These conditions compel firms to allocate limited resources with greater selectivity and speed, thereby intensifying the need for strategic prioritization. In this context, while ambidexterity—the simultaneous pursuit of exploration and exploitation—may yield positive performance outcomes under stable conditions, its efficiency is likely to diminish during crises. This decline stems from increased coordination costs across competing activities and the resulting dispersion of resources. Such challenges are particularly pronounced for SMEs with limited resource slack; for these firms, maintaining ambidexterity may fragment organizational focus and ultimately undermine firm performance.

Against this backdrop, rather than maintaining balance at the onset of a crisis, rapidly shifting strategic focus and reallocating resources may constitute a more effective response strategy. Prior research highlights the effectiveness of sequential ambidexterity, in which firms temporally separate exploration and exploitation to adapt to changing environments (O'Reilly & Tushman, 2013; Cao et al., 2009). From this perspective, performance differences are not primarily driven by a static level of balance at a given point in time, but rather by

the dynamic process through which firms adapt to a new strategic direction and reallocate resources following a strategic shift.

However, even under crisis conditions, firms do not operate under homogeneous conditions, and strategic choices are not random. Some firms may be able to maintain ambidexterity due to resource slack and managerial capabilities, whereas others may opt for strategic switching in response to external shocks. Moreover, the absence of switching does not necessarily reflect strategic inertia; rather, it may result from sufficient performance or buffering capacity that reduces the need for change. Therefore, to better understand firm performance under crisis, it is necessary to move beyond comparing average effects across strategies and to consider both heterogeneity in strategic choice and the temporal dynamics surrounding switching.

Building on this perspective, this study first compares the effects of maintaining ambidexterity and engaging in strategic switching under crisis conditions. Second, it examines which firms are more likely to switch and how pre-switch trends evolve over time. Accordingly, the following research questions are proposed.

Specifically, under crisis conditions that require prioritization and concentration of resources, the performance benefits of maintaining ambidexterity balance are expected to diminish. In contrast, timely strategic switching in response to crisis conditions is likely to enhance performance by facilitating resource reallocation.

H1. *In crisis conditions, is strategic switching more effective than maintaining ambidexterity balance?*

H1-1. *The effect of ambidexterity balance on sales recovery becomes less favorable during crisis periods.*

H1-2. *Strategic switching is positively associated with sales recovery during crisis periods.*

Meanwhile, the effects of strategic switching are unlikely to materialize immediately at the moment of transition; rather, they are expected to unfold gradually through post-switch processes such as resource reallocation, organizational adjustment, and the accumulation of learning. The elapsed time after switching does not merely reflect the passage of time, but captures the organization's cumulative capacity to adapt and reconfigure following a strategic shift. Accordingly, the effects of strategic switching are expected to be cumulative, becoming more pronounced as time passes after the transition.

H2. *Do the benefits of strategic switching emerge immediately or only after an adaptation period?*

3.3. Research Model

3.3.1. Hypothesis 1: Ambidexterity Balance vs. Strategic Switching Under Crisis Conditions

H1 examines whether maintaining ambidexterity balance (AB) and engaging in strategic switching (SS) have differential effects on sales recovery under crisis conditions. To test this, we employ a panel fixed-effects model that includes both firm and year fixed effects.

H1-1. *Ambidexterity Balance Model.*

$$\text{Sale Recovery}_{it} = \alpha_i + \lambda_t + \beta_1 AB_{it} + \beta_2 \text{During}_t + \beta_3 \text{Post}_t + \beta_4 (AB_{it} \times \text{During}_t) + \beta_5 (AB_{it} \times \text{Post}_t) + \gamma' X_{it} + \epsilon_{it} \quad (1)$$

H1-2. Strategic Switching Model.

$$\text{Sale Recovery}_{it} = \alpha_i + \lambda_t + \beta_1 SS_{it} + \beta_2 \text{During}_t + \beta_3 \text{Post}_t + \beta_4 (SS_{it} \times \text{During}_t) + \beta_5 (SS_{it} \times \text{Post}_t) + \gamma' X_{it} + \epsilon_{it} \quad (2)$$

The nomenclature of the variables used in the equations is presented in Table 2.

Table 2. Nomenclature Table.

Symbol	Variable	Measurement
<i>Sale Recovery_{it}</i>	Sales recovery	sales recovery performance of firm <i>i</i> at time <i>t</i>
<i>AB_{it}</i>	Ambidexterity balance (AB)	ambidexterity balance of firm <i>i</i> at time <i>t</i>
<i>SS_{it}</i>	Strategic Switching (SS)	strategic switching of firm <i>i</i> at time <i>t</i>
<i>During_t</i>	During-crisis (2020–2022),	dummy variable indicating the crisis period
<i>Post_t</i>	Post-crisis (2023)	dummy variable indicating the post-crisis period
vector of control variables		
<i>X_{it}</i>	<i>ln_sale_{it}</i>	the logarithm of sales
	<i>firm_age_{it}</i>	years since establishment
	<i>KSIC_i</i>	KSIC industry classification codes
	<i>tech_level_i</i>	1: High-tech 2: Mediu-tech 3. Genral purpose tech
α_i	firm fixed effects	
λ_t	year fixed effects	

Note: Variables are presented in italics following standard mathematical notation.

3.3.2. Hypothesis 2: Temporal Emergence of Strategic Switching Effects

H2 examines whether the performance implications of strategic switching emerge immediately at the time of switching or accumulate over time through post-switch adaptation and resource reallocation processes. To test this, we employ an event-study fixed-effects model that constructs relative event time with respect to the first switching event. Importantly, this specification is used not only to trace post-switch recovery dynamics, but also to assess whether switching firms were already following different performance trajectories prior to the observed switching event

$$\text{Sale recovery}_{i,t-1} = \alpha_i + \lambda_t + \sum_{k \in \{-4, -3, -2, 0, 1, 2, 3\}} \beta_k 1(ET_{it} = k) + \gamma' X_{it} + \epsilon_{it} \quad (3)$$

ET is defined relative to the first strategic switching year, such that $ET < 0$ denotes pre-switch periods, $ET = 0$ corresponds to the switching year, and $ET > 0$ represents post-switch periods. Due to data availability, the event window is restricted to $[-4, +3]$. In the regression model, $ET = -1$ is omitted and used as the reference category. This normalization follows standard event-study practice, as event-time indicators are collinear with firm and year fixed effects. Accordingly, each event-time coefficient is interpreted as the difference in sales recovery relative to one year before the switch.

$$ET_{it} = t - T_i^S \quad (4)$$

3.4. Method

To examine how ambidexterity balance and strategic switching are associated with sales recovery among SMEs before, during, and after a crisis, this study employs a firm–year panel data analysis. All empirical analyses were conducted using Stata 17.0.

To isolate the effect of ambidexterity balance and strategic switching on firm recovery, we estimate panel models with both firm and year fixed effects. Firm fixed effects absorb time-invariant heterogeneity across firms, such as managerial orientation, organizational culture, and accumulated capabilities, whereas year fixed effects capture common macroeconomic and crisis-related shocks affecting all firms. In addition, crisis-period dummies are included to distinguish the pre-crisis, during-crisis, and post-crisis phases, and their interactions with the focal variables allow us to examine whether the performance implications of balance and switching vary across crisis stages. Control variables, including firm size, firm age, industry classification, and technological level, are included to account for resource endowments, organizational maturity, sectoral heterogeneity, and innovation capability, respectively.

Because firms that engage in strategic switching may systematically differ from those that do not, potential concerns regarding sample selection and endogeneity remain. To mitigate these concerns, this study not only employs a two-way fixed-effects model to control for unobserved time-invariant heterogeneity, but also conducts an event-study analysis to examine pre-switch performance trends. Specifically, the event-study model is used not only to trace post-switch recovery dynamics, but also to assess whether firms that undertook strategic switching had already been following different performance trajectories prior to the switching event. In this sense, the event-study serves both as a dynamic outcome analysis and as a diagnostic tool for identifying pre-switch trends, helping us interpret more cautiously whether the observed post-switch recovery patterns reflect post-switch adaptation, pre-existing performance trajectories, or a combination of both.

3.5. Variable Measurement

3.5.1. Dependent Variable: Sale Recovery

Sales recovery is measured as the inverse hyperbolic sine (IHS) transformation of the difference between current sales and pre-crisis baseline sales, where the baseline is defined as firm-level sales in 2019 (the last pre-crisis year). This operationalization is grounded in several statistical and methodological considerations.

First, the difference in sales may take negative, zero, or positive values. For instance, when current sales fall below the 2019 baseline, the resulting difference is negative, making standard logarithmic transformations infeasible. The IHS transformation, defined over the entire real line, allows for a consistent treatment of firms that have not yet recovered (negative values), those that have returned to the 2019 level (zero), and those that have exceeded pre-crisis performance (positive values).

Second, substantial heterogeneity in sales changes across firms may generate extreme values that disproportionately influence estimation results. The IHS transformation behaves similarly to a logarithmic function for large values, effectively compressing the scale and mitigating the influence of skewness and outliers. This contributes to more stable and reliable parameter estimates.

Third, the IHS function is approximately linear in the neighborhood of zero. As a result, small deviations from the 2019 baseline are preserved with minimal distortion, while larger deviations are progressively compressed. This property enables meaningful comparisons across firms at different stages of recovery—ranging from under-recovery to full recovery and over-recovery—within a unified metric.

Taken together, the IHS-transformed sales recovery measure provides a robust and interpretable indicator that accommodates the distributional characteristics of the data while preserving substantive variation across firms.

3.5.2. Independent Variable: Ambidexterity Balance (AB)

Ambidexterity balance (AB) captures the extent to which a firm maintains a balanced allocation between exploration and exploitation activities. Building on the notion that adaptive capacity depends on balancing these two modes (March, 1991; Tushman & O'Reilly, 1996), this study conceptualizes AB as the degree to which a firm avoids persistent bias toward either exploration or exploitation in its recent strategic orientation.

To operationalize this construct, we used survey items asking firms to report their primary areas of investment in technological development during the previous year. In line with prior research, this study classifies new product development (item ①) and new process development (item ③) as exploratory activities, as they involve the pursuit of new knowledge, markets, and technologies. In contrast, product improvement (item ②) and process improvement (item ④) are categorized as exploitative activities, as they focus on the refinement and efficiency enhancement of existing resources and capabilities (March, 1991; He & Wong, 2004). Based on these classifications, firm-year indicators of exploratory and exploitative orientation are constructed for each observation.

Ambidexterity can be measured using several approaches, including multiplicative, additive, and absolute difference measures (Cao et al., 2009). Because the theoretical interest of this study lies in the balance dimension of ambidexterity rather than in the combined magnitude of simultaneous exploration and exploitation, we employ an absolute-difference measure. Specifically, AB is constructed from the firm's exploration and exploitation histories over the two preceding periods:

$$AB_{it} = 1 - |Exploration_History_{it} - Exploitation_History_{it}| \quad (5)$$

$$Exploration_History_{it} = \frac{Explore_{i,t-1} + Explore_{i,t-2}}{2}$$

$$Exploitation_History_{it} = \frac{Exploit_{i,t-1} + Exploit_{i,t-2}}{2}$$

Accordingly, the measure captures the extent to which a firm maintained a balanced strategic orientation across the prior two years. The index ranges from 0 to 1. Values closer to 1 indicate that the firm maintained a more even balance between exploration and exploitation over the preceding two periods, whereas values closer to 0 indicate a stronger historical bias toward one activity over the other. In other words, the measure increases as the gap between exploration history and exploitation history narrows. This specification is appropriate because the study is concerned not with whether firms pursue both activities at high levels simultaneously, but with whether they maintain a relatively balanced allocation between the two over time.

3.5.3. Independent Variable: Strategic Switching (SS)

Strategic Switching (SS) refers to a variable indicating whether a firm undertakes a strategic shift between exploration and exploitation in a given period. In the baseline analysis, SS is used to capture the occurrence of strategic reorientation itself, and to compare its performance implications with those of maintaining ambidexterity balance under crisis conditions.

To capture the temporal dynamics of strategic switching and the subsequent cumulative adaptation process, this study defines SS as the number of years elapsed since a firm's first strategic switching event:

$$SS_{it} = Year_t - First\ switching\ year_i \quad (6)$$

where $Year_t$ denotes the observation year and $First\ switching\ year_i$ refers to the year in which firm i first undertook a strategic switch. Accordingly, a higher value of SS indicates that the firm undertook strategic switching at an earlier point in time and, therefore, has accumulated more time to adapt to its new strategic orientation after the switch. In other words, SS does not measure the delay between the onset of the crisis and the switching event; rather, it captures the cumulative amount of time available for the organization to adjust to and institutionalize its new strategic direction after the switch has occurred.

Conceptually, this accumulated time carries a meaning that goes beyond the mere passage of calendar years. The accumulation of time following strategic switching enables resource reallocation, organizational realignment, the establishment of a new operating logic, and the gradual internalization of a new strategic orientation. Thus, SS can be interpreted as a variable that indirectly reflects the depth and maturity of post-switch adaptation.

However, although SS is useful for assessing whether performance improves on average as more time elapses after the switching event, it has the limitation of not showing precisely when such effects emerge. For example, SS alone cannot distinguish whether the effect of switching occurs immediately after the switch, appears only after a certain adaptation period, or simply reflects pre-existing trends that were already present before the switching event. Therefore, while SS is appropriate for capturing the cumulative adaptation effect following strategic switching, additional analyses such as an event-study are needed to identify more precisely the timing and dynamic trajectory of the effect.

3.5.4. Time Period

Time period is a categorical variable that classifies each observation into distinct phases of the crisis. Specifically, it is defined as follows:

Pre-crisis (2019): Period prior to the onset of the crisis;

During-crisis (2020–2022): Period in which the crisis is ongoing;

Post-crisis (2023): Period following the crisis.

In the empirical analysis, the pre-crisis period serves as the reference category, while dummy variables are included for the during-crisis and post-crisis periods.

3.5.5. Control Variable

To account for alternative explanations and isolate the effects of the focal variables, we include several control variables that may influence firm recovery performance. First, firm size is controlled for using the logarithm of sales ($\ln_sales$), as larger firms tend to possess greater resource endowments and buffering capacity, which may affect recovery dynamics. Second, firm age is included to capture organizational maturity and accumulated experience, which may influence adaptive capacity and resilience. Third, industry effects are controlled for using industry classification codes (KSIC), as recovery patterns may systematically differ across sectors due to variations in demand conditions and technological intensity. Finally, we control for technological level ($tech_level$) to account for differences in firms' innovation intensity and technological capabilities, which may shape their ability to respond to environmental shocks. All control variables are included in the regression models to ensure that the estimated effects of ambidexterity balance and switching-related temporal capability are not confounded by firm-specific or industry-level characteristics.

4. Results

4.1. Descriptive Analysis

4.1.1. Firm Sales

Table 3 reports the mean, standard deviation, and interquartile range of firm-level sales over the sample period. The evidence suggests that the crisis did not lead to

a uniform decline in average sales, but rather increased dispersion and heterogeneity in firm performance.

Table 3. Firm Sales Distribution by Year (million KRW).

Year	Mean	Std.	25%	75%
2019	18,071.22	23,667.99	5262	21,422
2020	17,934.18	19,578.75	5608	21,686
2021	19,061.2	21,262.37	5383.5	23,620
2022	20,731.48	23,369.25	5793	26,715
2023	22,835.38	30,482.62	5774	28,364.5
Total	19,790.71	24,268.13	5540	24,285

Specifically, mean sales declined only slightly from 18,071 million KRW in 2019 to 17,934 million KRW in 2020, followed by a steady recovery thereafter. The median shows a similar pattern, indicating relative stability in the central tendency during the crisis. However, the widening gap between the mean and median, along with the increase in standard deviation—particularly in 2023—suggests growing right-skewness and rising performance inequality.

A closer look at the distribution reinforces this pattern. While firms in the lower quartile (25th percentile) exhibit relatively stagnant sales, those in the upper quartile (75th percentile) experience substantial growth. This asymmetry indicates that recovery is not broadly shared but concentrated among higher-performing firms.

Overall, the crisis appears to have induced a distributional shift characterized by increased dispersion and skewness, rather than a uniform level effect. The post-crisis rise in average sales is driven primarily by top-performing firms, consistent with performance divergence and a “winner-takes-more” dynamic.

4.1.2. Strategic Switching

(1) First switching year

Table 4 reports the distribution of firms by the year of their first strategic switching event. The results show that the largest proportion of firms initiated switching in 2020 (39.45%), followed by 2023 (19.45%) and 2021 (14.44%), while a smaller share of firms switched in 2022 (7.05%). Notably, 19.61% of firms are classified as “never,” indicating that they did not engage in any switching behavior during the observation period.

This distribution suggests that strategic switching was most actively triggered in the early phase of the crisis, particularly in 2020, when firms faced the initial shock of environmental disruption. The relatively lower frequency of switching in subsequent years may indicate that firms either adjusted their strategies early or maintained their existing orientations once initial adaptation had taken place. At the same time, the presence of a substantial proportion of non-switching firms highlights heterogeneity in strategic responses, suggesting that not all firms engaged in temporal reconfiguration despite facing similar external conditions.

Table 4. First switching year.

Year	Freq.	Percent
2020	716	39.45
2021	262	14.44
2022	128	7.05
2023	353	19.45
Naver	356	19.61
Total	1815	100

4.2. Hypothesis Analysis

4.2.1. Ambidexterity vs. Strategic Switching(H1)

The results presented in [Table 5] compare the effects of ambidexterity balance (AB) and strategic switching (SS) on sales recovery across different crisis phases. First, the effect of AB is found to shift in a negative direction during the crisis period relative to the pre-crisis period ($\beta = -1.584$, $p < 0.05$). In contrast, while the main effect of strategic switching (SS) is statistically significant, its interaction effects for the during- and post-crisis periods relative to the pre-crisis period are not significant. These findings suggest that, while strategic switching is positively associated with sales recovery in some models, there is insufficient evidence to support the conclusion that its effect varies significantly across different crisis phases.

Table 5. Result of H 1.

Sale_Recovery	Ambidexterity Balance		Strategic Switching	
	β (Std.)	t	β (Std.)	t
Ambidexterity Balance (AB)	0.613 (0.654)	0.94		
Strategic Switching (SS)			0.523 (0.281)	1.86 *
time period: during_crisis	2.027 (0.767)	2.64 **	−0.149 (0.764)	−0.20
time period: post_crisis	1.944 (0.566)	3.44 ***	0.118 (1.157)	0.10
AB*during_crisis	−1.584 (0.758)	−2.09 **		
SS*during_crisis			0.033 (0.198)	0.17
SS*post_crisis			−0.249 (0.259)	−0.96
ln_sale	11.541 (0.672)	17.16 ***	11.252 (0.716)	15.71 ***
firm_age	−0.096 (0.027)	−3.54 ***	−0.097 (0.026)	−3.65 ***
KSIC	−0.000 (0.000)	−0.57	−0.000 (0.001)	−0.57
tech_level 2	−0.291 (0.100)	−0.74 ^{n/s}	−0.473 (0.441)	−1.07

Table 5. Cont.

Sale_Recovery	Ambidexterity Balance		Strategic Switching	
	β (Std.)	t	β (Std.)	t
tech_level 3	−0.117 (0.483)	−0.24 ^{n/s}	−0.327 (0.552)	−0.59
_cons	−105.230 (6.402)	−16.44 ***	−100.917 (6.759)	−14.93 ***
R-squared	0.130		0.130	
Number of obs	1757		1459	

Notes: Cluster-robust standard errors clustered at the firm level are reported in parentheses. The reference category for crisis phase is the pre-crisis period. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, ^{n/s} = not significant.

To further examine phase-specific effects, marginal effects were estimated for each period [Table 6]. The results show that the effect of AB becomes significantly negative during the crisis period ($dy/dx = -0.972$, $p < 0.01$), and the phase difference test is also statistically significant ($F = 4.37$, $p < 0.05$), indicating that the effect of AB varies across phases. By contrast, SS exhibits a positive and statistically significant association with firm performance during the crisis period ($\beta = 0.557$, $p < 0.01$), and a weakly positive effect is also observed in the pre-crisis period ($\beta = 0.524$, $t = 1.86$, $p < 0.10$). However, the non-significant F-test for differences across crisis phases ($F = 0.60$, n.s.) suggests that the effect of strategic switching does not systematically differ across crisis stages. Accordingly, while the findings support a positive association between strategic switching and sales recovery during the crisis period, they do not provide sufficient evidence to assert that strategic switching exerts a uniquely crisis-specific effect.

Table 6. Phase-specific marginal effects.

Crisis Phase	Ambidexterity Balance		Strategic Switching	
	β (Std.)	t	β (Std.)	t
Pre-crisis	0.613 (0.654)	0.94	0.524 (0.282)	1.86 *
During-crisis	−0.971 (0.363)	−2.67 ***	0.557 (0.208)	2.68 ***
Post-crisis	0.613 (0.654)	0.94	0.274 (0.340)	0.81
Phase difference: F-test	4.37 **		0.60	

Notes: Reported coefficients are phase-specific marginal effects computed using linear combinations of estimated coefficients. The F-test corresponds to the joint significance of interaction terms (testparm). Standard errors are clustered at the firm level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Figure 1 presents the phase-specific marginal effects of the focal independent variables across crisis phases, providing partial support for RQ1.

These findings suggest that the performance implications of ambidexterity balance not only weaken under crisis conditions but may even reverse and become negative. Under crisis conditions, the simultaneous pursuit of exploration and exploitation may impose excessive coordination costs and resource burdens, thereby undermining recovery performance.

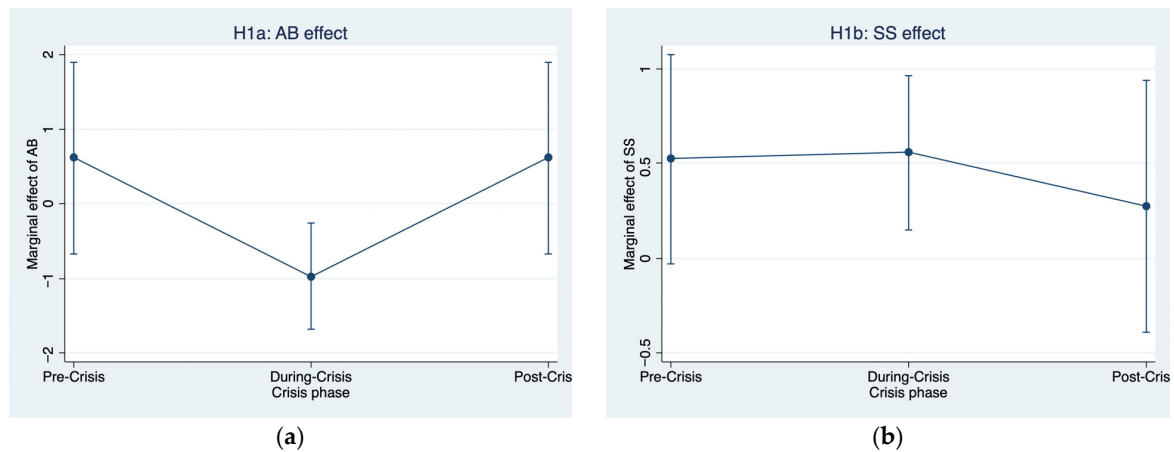


Figure 1. Marginal effects of Ambidexterity Balance (AB) and Strategic Switching (SS) across crisis phases. (a) Marginal effects of ambidexterity balance. (b) Marginal effects of Strategic Switching.

In contrast, while SS shows a positive and significant association with firm performance during the crisis period, its effect size does not differ significantly across phases. This pattern suggests several possible interpretations. Firms with relatively strong performance may have had little incentive to engage in switching, whereas firms experiencing severe performance declines may have been more likely to do so. Alternatively, only firms with sufficient slack resources may have been able to implement switching, or firms with superior managerial capabilities may have been more likely to execute effective switching strategies.

4.2.2. Event-Study Evidence on the Temporal Emergence of Strategic Switching Effects (H2)

Table 7 reports the event-study fixed-effects estimates for H2, tracing firms' sales recovery before and after their first strategic switching event. Following standard event-study practice, the relative year immediately prior to switching ($ET = -1$) is omitted and used as the reference category. As Miller (2023) explains, this normalization is necessary because event-time indicators are collinear with unit and time fixed effects; accordingly, each event-time coefficient should be interpreted as the difference in sales recovery relative to one year before the switch, rather than relative to an absolute zero-effect baseline. This choice is substantively appealing because it uses the last pre-switch period as the benchmark for evaluating whether the effects of switching emerge immediately or unfold over time. At the same time, it requires caution: if the period just before switching already reflects anticipation or preparatory adjustment, then $ET = -1$ should be understood as the final pre-switch comparison point, not as a fully untreated state. The dynamic pattern of the event-time coefficients is illustrated in Figure 2.

Table 7. Result of H2.

Sale Recovery		RQ3	
		β (Std.)	t
Event Time	−4	−1.598 (0.520)	−3.07 ***
	−3	−1.228 (0.631)	−1.94 *
	−2	−0.516 (0.444)	−1.16
	0	0.724 (0.369)	1.96 *
	1	0.799 (0.430)	1.86 *
	2	1.659 (0.440)	3.77 ***
	3	1.378 (0.548)	2.51 **

Table 7. Cont.

Sale Recovery	RQ3	
	β (Std.)	t
ln_sale	11.260 (0.716)	15.72 ***
firm_age	−0.095 (0.025)	−3.76 ***
KSIC	−0.000 (0.000)	−0.52
tech_level 2	−0.521 (0.442)	−1.18
tech_level 3	−0.382 (0.562)	−0.68
_cons	−101.65 (6.662)	−15.26 ***
R-squared	0.130	
Number of obs	1459	

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

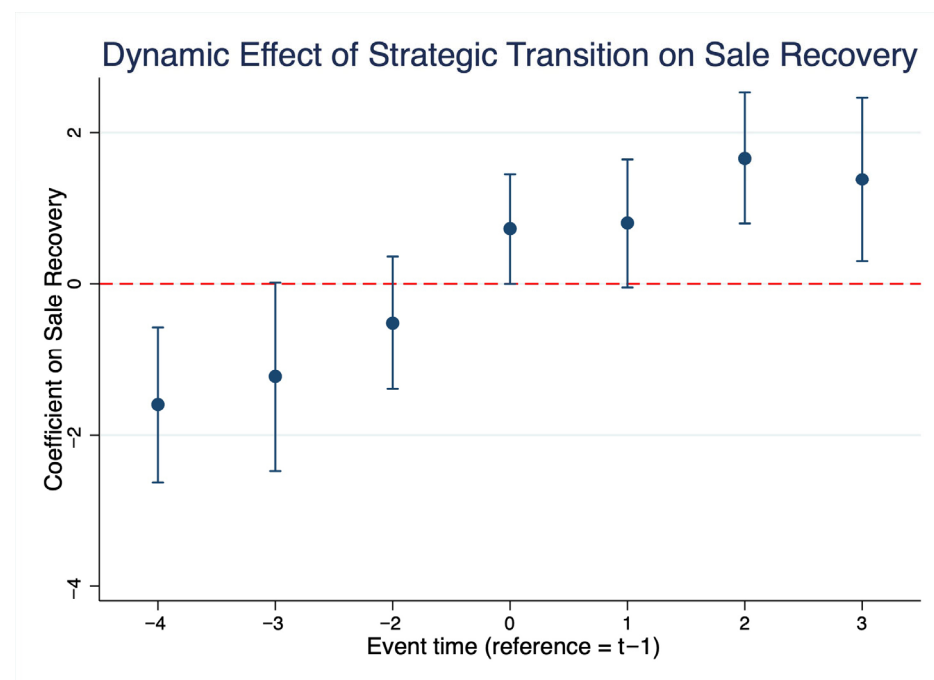


Figure 2. Dynamic Effect of Strategic Transition on Sale Recovery. Notes: The figure plots event-time coefficients from the fixed-effects event-study model, with one year prior to the strategic transition (ET = −1) as the reference category. Error bars represent 95% confidence intervals.

The coefficients for the pre-switch periods are informative. Using ET = −1 as the reference, the estimates reveal that sales recovery was significantly lower four years before the switch ($\beta = -1.598$, $p = 0.002$) and marginally lower three years before the switch ($\beta = -1.228$, $p = 0.053$). The coefficient for two years before the switch remains negative but statistically insignificant. This pattern suggests that firms were already on an improving trajectory as the switching event approached. In other words, strategic switching did not arise abruptly from a neutral baseline; rather, it appears to have been embedded in an ongoing process of adjustment and reconfiguration prior to the switch.

The coefficient for the switching year itself (ET = 0) is positive and marginally significant ($\beta = 0.724$, $p = 0.051$), indicating that recovery tended to improve in the year of switching relative to one year before the switch, although the immediate effect is limited. A similar pattern is observed one year after the switch (ET = 1: $\beta = 0.799$, $p = 0.064$). In contrast, a substantial and statistically significant increase emerges two years after the

switch (ET = 2: $\beta = 1.659$, $p < 0.001$), and the positive effect remains significant three years after the switch (ET = 3: $\beta = 1.378$, $p = 0.013$). Taken together, these findings suggest that the recovery pattern associated with strategic switching is not instantaneous but delayed and cumulative, becoming more pronounced as firms reallocate resources, realign operations, and accumulate learning over time. Overall, Table 7 suggests that strategic switching is associated with a favorable post-switch recovery pattern, but that this pattern should not be interpreted as a strict causal effect. Because the pre-switch coefficients indicate that switching firms were already on a changing trajectory prior to the observed switching event, the results are better understood as showing that strategic switching is embedded in a broader adjustment process and that its recovery benefits become visible only after a period of post-switch adaptation.

5. Discussion

This study examined how ambidexterity balance and strategic switching are associated with firms' recovery performance under crisis conditions. The findings suggest that the "superiority of balance," long emphasized in the organizational ambidexterity literature, may not necessarily hold under crisis conditions. While maintaining a balance between exploration and exploitation may enhance firm performance under normal conditions by simultaneously supporting current efficiency and future adaptability, the results indicate that such effects become attenuated, and may even turn negative, during crises. In contrast, strategic switching exhibits a relatively favorable association with recovery performance during the crisis period in several specifications, although the evidence is more limited when it comes to showing that this association differs significantly across phases. These findings imply that organizational recovery during crises depends less on maintaining static balance and more on whether firms can engage in timely strategic reconfiguration and sustain sufficient post-switch adaptation.

First, this study demonstrates that the performance implications of ambidexterity balance are highly context-dependent. Prior ambidexterity research has consistently argued that balancing exploration and exploitation constitutes a key mechanism through which firms improve innovation and performance (He & Wong, 2004; Cao et al., 2009). However, the present findings suggest that the benefits of balance do not remain constant under crisis conditions. During crises, resource constraints, uncertainty, and survival pressures intensify simultaneously, substantially increasing the coordination burden associated with maintaining both exploratory and exploitative activities. For SMEs with limited resources, attempts to sustain both activities concurrently may instead lead to resource dispersion and strategic ambiguity. This suggests that, under crisis conditions, what matters may not be maintaining balance itself, but rather concentrating limited resources toward a prioritized strategic direction in order to respond rapidly to environmental change.

These findings call for a more dynamic and contingent understanding of organizational ambidexterity. Existing studies have primarily emphasized the general performance benefits of balancing exploration and exploitation under relatively stable conditions. In contrast, this study suggests that under conditions of severe environmental turbulence, maintaining balance itself may hinder organizational agility and rapid response. In this sense, the findings provide an important boundary condition for the ambidexterity literature by showing that ambidexterity is not universally beneficial across all contexts.

Second, this study provides empirical support for the importance of sequential ambidexterity under crisis conditions. Rather than maintaining exploration and exploitation simultaneously, firms appear to respond to crises by strategically reorienting their emphasis and reallocating resources over time. This finding suggests that sequential ambidexterity may represent a more feasible and effective approach under conditions characterized by

severe resource constraints. In particular, SMEs often lack the slack resources necessary to sustain structural ambidexterity, making temporal separation between exploration and exploitation a more efficient organizational arrangement.

Importantly, the findings also suggest that strategic switching should be understood as more than a simple directional shift. This finding extends prior discussions of temporal switching capability (Chou et al., 2018) by showing that the benefits of switching emerge gradually through post-switch organizational adaptation rather than immediately at the point of transition. Strategic switching involves not merely moving from exploration to exploitation, or vice versa, but rather reconfiguring and redeploying organizational resources in response to changing environmental demands. This interpretation is closely aligned with the perspectives of dynamic capabilities and resource orchestration. Under crisis conditions, differences in firm performance may depend less on the possession of superior resources than on the ability to rapidly and effectively redeploy those resources.

Third, this study suggests that the performance implications of strategic switching do not emerge immediately. The event-study analysis indicates that the immediate recovery effects of switching are relatively limited, whereas substantial performance improvements emerge only after a period of post-switch adaptation. This finding suggests that strategic switching should be understood not as a discrete decision event, but as an organizational adaptation process. Transitioning toward a new strategic orientation requires resource reallocation, operational adjustment, organizational learning, and market adaptation, all of which involve substantial time lags before they translate into observable performance outcomes.

These findings further suggest that organizational resilience should be understood not as short-term shock absorption, but as a longer-term process of adaptive adjustment. Firms often expect immediate improvements following strategic reorientation during crises. However, the present findings indicate that the benefits of strategic switching accumulate gradually over time. In this sense, the success of strategic switching depends not simply on whether firms switch strategies, but on whether they can sustain post-switch learning and organizational adjustment over time.

Overall, this study suggests that the core of organizational recovery under crisis conditions lies not in maintaining balance per se, but in engaging in timely strategic reconfiguration and allowing sufficient time for post-switch adaptation. By doing so, this study extends the organizational ambidexterity literature beyond a static balance perspective toward a more dynamic understanding centered on strategic switching, resource reconfiguration, and organizational adaptation.

6. Conclusions

This study examined how ambidexterity balance and strategic switching differently influence SME recovery performance under crisis conditions. Using panel data from Korean SMEs during the COVID-19 period, the findings suggest that the positive effects of ambidexterity balance weaken during crises, whereas strategic switching and post-switch adaptation contribute more positively to recovery performance. These results imply that, under conditions of heightened uncertainty and resource constraints, maintaining simultaneous balance between exploration and exploitation may become less effective than strategically reorienting organizational focus and reallocating resources over time.

Our findings contribute to the ambidexterity literature by extending the discussion from simultaneous balance to sequential adaptation. In particular, the findings suggest that the effectiveness of ambidexterity is contingent upon crisis conditions and that post-switch organizational adjustment plays an important role in firm recovery. The study also con-

tributes to the resilience and dynamic capabilities literature by highlighting the importance of strategic reconfiguration and temporal adaptation under environmental turbulence.

This study is not without limitations. First, the analysis is based on Korean SMEs during the COVID-19 period, which may limit the generalizability of the findings across countries and crisis contexts. Second, although this study captures strategic switching through temporal changes in exploration and exploitation patterns, it does not directly observe the internal managerial decision-making processes and organizational mechanisms underlying such transitions. Third, this study does not distinguish between different switching directions, such as transitions from exploration to exploitation versus transitions from exploitation to exploration. However, these two types of switching may involve different levels of resource commitment, learning processes, uncertainty, and timing of performance realization. Future research may therefore further investigate how switching direction and switching speed differently influence organizational adaptation and recovery performance under crisis conditions.

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