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# Improving the Performance of SMEs in the Food Industry: The Effects of Strategic Learning, Strategic Innovation, and Strategic Agility

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## ABSTRACT

The present study aims to explore how strategic learning influences the performance enhancement of small and medium enterprises, with a focus on the mediating roles of strategic innovation and strategic agility, as well as the moderating role of absorptive capacity. This research is practical in its purpose and employs a descriptive survey method. The study's statistical population consists of small and medium enterprises in Ilam province. For this purpose, the sample size, consisting of 138 individuals, was calculated using G-Power software. SmartPLS 3 software was employed in the data analysis section to test the research model. The research findings showed that strategic learning, strategic agility, and strategic innovation enhanced the performance of small and medium enterprises. Furthermore, strategic innovation and strategic agility have a mediating role in the relationship between strategic learning and the performance of small and medium enterprises. Moreover, according to the results, the moderating role of absorptive capacity in the relationship between strategic learning, strategic agility, and the performance of small and medium enterprises was confirmed. Despite this, the type and amount of absorptive capacity in the studied statistical population is such that it cannot affect the intensity of the relationship between strategic innovation and the performance of small and medium enterprises. Based on the results, strategic learning can be considered a critical factor in achieving the successful performance of small and medium enterprises and its continuation. In addition, rapid changes and environmental dynamics are regarded as the most obvious features of the business environment in this era. Therefore, small and medium enterprises must have the ability to be agile and strategically innovative, as strategic agility and strategic innovation are the best approaches for adapting to environmental changes.

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## 1. Introduction

In today's dynamic and competitive market, small and medium enterprises (SMEs) are considered the engines of economic growth and technological progress. These firms play an inevitable role through their inherent ability to continuously innovate new products and processes (Singh et al., 2022; Subrahmanya & Loganathan, 2021). In the meantime, the food industry is considered one of the significant sectors in the field of SMEs and one of the most important branches of the national economy, which plays the main role in processing raw materials and food supply. As a consequence, numerous researchers emphasize its relationship with employment and economic efficiency (Menrad, 2004; Yaqoob et al., 2022). Despite this, the food industry has traditionally been considered a sector with low research intensity in the literature on development and innovation. However, innovations in this industry are important tools for distinguishing from competitors and meeting consumer expectations (Bigliardi & Galati, 2013; Guiné et al., 2020). In addition, the food industry, both at the level of society and in the production and processing of food, has faced technical and economic changes, which in turn had a significant impact on the entire food supply and distribution chain (Yaqoob et al., 2022). All of these cases have forced firms to pay more attention to their strategy so that they can face competitors, and the survival of the firm has become one of the main concerns of the literature on strategic management and organization theory (Ramos & Ellitan, 2023). Although many researchers have addressed the issue of the firm's adaptation to environmental changes, most of them have raised this issue based on approaches other than Strategic learning (SL) (Liu et al, 2021). In today's turbulent world, SL is crucial for enhancing organizational performance and increasing agility, and it is essential for long-term success (Hussein et al., 2023; Mueller et al., 2012). Only businesses that leverage the capabilities and learning capacity of their employees at all organizational levels through SL will be able to remain competitive and sustain their operations (Gomes et al., 2022; Sadeghi et al., 2014). On the other hand, the high rate of business mortality indicates that firms are often unable to achieve SL, and have difficulty paying attention to environmental changes, predicting the consequences of these changes, and modifying their structures to adapt to external changes. As a result, few firms continue to survive for extended periods (Moon & Ruona, 2015). Therefore, in today's turbulent and dynamic environment, businesses need to respond to external changes and opportunities faster than the strategic planning approach. In such a situation, businesses can use the SL approach to quickly identify changes and take advantage of emerging opportunities at the right time (Al-Hawary & AlRasheedy, 2021; Idris & Al-Rubaie, 2013). On the other hand, innovation is one of the main motivators for the growth of firms and value production. Especially with the introduction of a knowledge-based economy, strategic innovation (SI) is considered the key factor in determining the success or failure of firms in the field of competition, as well as the main source of competitive advantage. This is because the dynamic and competitive environment requires more attention to enhancing innovation capabilities within the organization (Thatrak, 2021). In this regard, SL can be considered a driver of innovation since it strengthens the organization's capabilities by challenging traditional views and is a vital component for SI that will lead to the development of new products (Hussein et al., 2023). In addition, successful businesses noticed that long-term survival and sustainability depend on achieving strategic agility (SA) and entrepreneurial excellence. In this context, SL is a fundamental and vital element that affects the SA of businesses, serving as a strategic solution to address the opportunities and challenges facing organizations in a dynamic environment (Elali, 2021; Idris & Al-Rubaie, 2013). Despite the importance of SL for SMEs, there are still gaps in the literature regarding how to effectively use this approach (Hamburg & O'Brien, 2014, Siren & Kohtamäki, 2017). Prior studies have addressed the importance of SL in strategy formulation; however, the mechanisms for its effective application in businesses have not been fully delineated (Al-Hawary & Al-Rasheedy, 2021). Prior research has predominantly focused on larger companies with extensive resources, overlooking challenges such as financial and human resource limitations faced by SMEs. Therefore, there is a need for more detailed studies to explore how SMEs can overcome these constraints and develop strong capabilities in SL (Baranowska-Prokop & Sikora, 2023; Berghman et al., 2013; Siren & Kohtamäki, 2017). Therefore, the current study will seek to answer this basic question: what effect does SL have on the performance of SMEs, considering the mediating roles of SI and SA, as well as the moderating role of absorptive capacity (AC)?

Following the review of the main research topic, the structure of this paper is organized as follows: In section 2, the literature review is presented. Subsequently, section 3 is dedicated to the research methodology. Section 4 covers the data analysis. Section 5 discusses the findings of the study and examines the results of the hypotheses and the research model. Finally, the paper concludes by presenting the practical and theoretical implications, as well as research limitations.

## 2. Literature Review and Hypothesis Development

### 2-1. SL and Performance

In recent decades, researchers have emphasized performance management and sustainability as key factors for competitive advantage and sustainable development (Băndoi, et al., 2020; Yousuf et al, 2021). SMEs operate in highly competitive, uncertain, and resource-limited environments, necessitating mechanisms to improve performance despite unpredictability and survival challenges. To address this, SMEs should adopt organizational learning to develop SL capabilities, which assist in formulating effective strategies and improving overall performance (Clauss et al., 2021; Yousuf et al., 2021). In unpredictable and competitive environments, SMEs face challenges in guaranteeing success or long-term survival (Yoshikuni & Albertin 2020). To drive this, they need to develop SL capabilities that include creating, sharing, interpreting, and implementing strategic knowledge (Baranowska-Prokop & Sikora, 2023; Hussein et al., 2023). SL is crucial for business survival and growth, as it enhances the organization's capacity to learn during strategy development (Hussein et al., 2023; Sirén, 2014). This is particularly important in dynamic environments such as those faced by SMEs, where rapid changes require frequent and significant strategic adjustments (Clauss et al., 2021; Doz & Kosonen, 2010; Moon et al., 2017). To answer these challenges, SMEs increasingly use SL as a tool to review the nature of their business and strategic positions, and acquire and internalize knowledge (Hussein et al., 2023; Siren & Kohtamäki, 2017). The relationship between SL and outcome variables enables businesses to create interventions in specific areas for the growth of tangible and intangible assets (Shlaka & Al-Zaidi, 2022). The literature review also indicates that SL can play an important role in improving firm performance (Gupta & Bose, 2019; Hamburg & O'Brien, 2014). Therefore, the first hypothesis of this research is presented as follows:

**$H_1$:** SL has a significant impact on the performance of SMEs.

### 2-2. SL and SI

In today's competitive environment, the success of companies depends on innovation. From the organizational point of view, innovation includes the creation, development, and implementation of new ideas (AlQershi, 2021). In this regard, SI is considered one of the key aspects of innovation and is a kind of value creation through knowledge and resources to implement ideas at the level of product or new processes (Drejer, 2006). Since SI is viewed as a necessity for firms, businesses must identify the key factors that shape SI and innovative performance. Based on dynamic capabilities theory and resource-based view, SL is a strong predictor for SI (Han & Zhang, 2021). SL within a firm shows the firm's ability to acquire and utilize knowledge, redefine a new strategic path, and exploit environmental opportunities, leading to the development of new processes and products (Sirén & Kohtamäki, 2016). In fact, SL is a vital component of innovation that leads to the development of new products. Researchers suggest that before the organization can improve its innovative behavior, management must actively promote learning within the organization (Vera et al., 2016). Furthermore, literature review indicates the positive effect of SL on SI (Han & Zhang, 2021; Lin et al., 2008). Therefore, the second research hypothesis is proposed as follows:

**$H_2$:** SL has a significant effect on SI.

### 2-3. SL and SA

To grow in today's turbulent environment, companies must navigate, change, and exploit opportunities for competitive advantage (Koçyiğit & Akkaya, 2020). The vital need for flexibility, development, and responsiveness has led to major reforms in business priorities, strategic vision, and the review of traditional models to achieve competitive advantage in the current turbulent environment (Li et al., 2020). SA is a new paradigm that helps firms respond to change and environmental dynamics. Firms

that are strategically agile adopt flexible strategies to respond promptly to customer needs (Bai et al., 2023; Clauss et al, 2019; Kohtamäki et al, 2020). Achieving SA requires SL, which involves identifying and discovering practical strategies through experimentation and observation of operations (Farjoun, 2002; Siren, 2012). Accordingly, strategic actions improve and evolve as firms learn from their interactions with the environment (Siren, 2012). Particularly in the turbulent and rapidly changing environment, firms need to respond to events and information more swiftly than through traditional strategic planning methods. In such environments, applying a SL approach enables firms to quickly identify customer preferences, market changes, and invest in emerging opportunities (Doz & Kosonen, 2010). In the context of the relationship between SL and SA, Kuwada (1998) shows that SL plays a fundamental role in enabling the organization to achieve agility in the process of product improvement. Moreover, A review of literature suggests that SL is among the main components in shaping SA of firms (Arman & Shafiei, 2017; Hussein et al., 2023; Idris et al., 2013). Therefore, the third hypothesis of the research is proposed as follows:

**$H_3$:** SL has a significant effect on SA.

### 2-4. SI and Performance

Today, competitiveness is a vital factor contributing to the survival and growth of firms, which along with the intensification of global competition, market changes, and technological developments, motivates firms to seek to create a competitive advantage to improve their performance and maintain their survival (Refah Kahriz et al., 2019). In such an environment, firms must possess basic elements enabling them to create value for their customers and gain a competitive advantage. Innovativeness and human capital can be mentioned as essential factors in improving the performance and competitive power of firms (Barba-Aragón & Jiménez-Jiménez, 2020). Based on this, firms should welcome innovation to continue successful performance and growth (AlQershi, 2021). This is because innovation is an important mechanism for maintaining competitiveness and ensuring the longevity of the firm in the business environment (El Chaarani et al., 2022). SI is also one of the main aspects of innovation, which has a great impact as a guide to monitor decisions and how to use resources to create a competitive advantage (AlQershi, 2021). SI means competing in the existing industry in a completely different way that redefines and promotes customer values (Varadarajan, 2018). In fact, SI can improve the firm's performance in different aspects, such as production, innovation, finance, and market (Herlinawati & Machmud, 2020; Walker, 2004; Yilmaz et al., 2005). The results of prior empirical studies have also emphasized the existence of a relationship between SI and performance (AlQershi, 2021; Damanpour & Evan, 1984; Wu et al., 2003). Therefore, the fourth research hypothesis is presented as follows:

**$H_4$:** SI has a significant effect on the performance of SMEs.

### 2-5. SA and Performance

In today's volatile business landscape, characterized by uncertainty and constant innovation, competition among firms has become different, emphasizing the importance of adaptation for survival and growth (AlTaweel & Al-Hawary, 2021; Battour et al., 2021). To thrive in such environments, firms must prioritize strategies that enhance performance (Yousuf et al, 2021). In such a situation, one of the necessary solutions is strategic SA which refers to a company's ability to face turbulent and dynamic environments (Bondzi-Simpson, & Agomor, 2021). In the 21st century, SA is crucial for sustainable performance and adapting to changing business perspectives (Iddris et al., 2014). Research in strategic management demonstrates the positive impact of SA on business performance, including improvements in long-term effectiveness, competitive advantage, ambidexterity, and innovation capabilities (Clauss et al., 2021). The results of empirical research also shows that SA is a powerful predictor in identifying environmental threats and enhances the SMEs' readiness for effective response. This makes the firm to be less vulnerable in the face of changes compared to its competitors and achieve better performance (Adomako et al., 2022; Clauss et al., 2019). In general, SA makes SMEs flexible in adapting to changes and responding appropriately. By creating continuity and alignment of the organization's strategic path with environmental changes, it can help the firm achieve superior performance (AlTaweel & Al-Hawary, 2021). Prior studies related to this field also

emphasize the important role of SA in improving the performance of firms (Al-Romeedy, 2019; Appelbaum et al, 2017; Clauss et al, 2019). Therefore, the fifth hypothesis of the research is presented as follows:

**$H_5$:** SA has a significant effect on the performance of SMEs.

**2-6. The Mediating Role of SI in the Relationship Between SL and Performance**

In today's globalized and competitive world, businesses encounter fierce competition driven by ongoing changes and market fluctuations. Adaptation to environmental changes is essential for firms to sustain and survive (Akkaya, et al., 2023). SI has thus emerged as a primary source of competitive advantage. Consequently, companies aspiring to establish or uphold a competitive advantage must embrace flexibility and change, making innovation the cornerstone of organizational success (Ozorhon et al., 2016; Senge, 2006). SI enables firms to create conditions for improving processes, structure, management systems, and products (Akkaya et al., 2023). On the other hand, management literature emphasizes the key role of SL in the forming of innovation and improving the firm's competitive advantage. Additionally, SL plays an important role in enabling companies to achieve flexibility in an innovation process (Islam & Munir, 2022). Firms that learn strategically are more adaptable to turbulent and changing environments, so they can be more efficient in innovation than their competitors. In addition, in strategic literature, change and innovation are also considered a consequence of SL (Pietersen, 2010). The results of previous research also indicates a significant relationship between SL and SI (Han & Zhang, 2021; Islam & Munir, 2022; Keshab & Joseph, 2018). Accordingly, the sixth hypothesis of the research is proposed as follows:

**$H_6$:** SI mediates the relationship between SL and performance of SMEs.

**2-7. The Mediating Role of SA in the Relationship Between SL and Performance of SMEs.**

Today, organizations are challenged by increasing competition and technological advances. To thrive, companies must swiftly adapt strategies and operations to embrace change and enhance efficiency, effectiveness, and performance (Akbari & Beigi, 2023). Survival depends on outperforming competitors by bolstering resources, capabilities, and core competencies, swiftly identifying customer needs, and adopting new business approaches—all requiring the implementation of SA (Idris et al., 2013). SA is defined as the flexibility and speed that enables firms to adapt their business models so that they can take advantage of existing opportunities more rapidly than their competitors (Debellis et al., 2020). Additionally, some researchers argue that SL can empower firms to attain SA in their development process (Hussein et al., 2023; Kuwada, 1998). Using SL as an organizational tool can create innovative business strategies that enhance firm performance while developing an effective set of leadership skills. Therefore, SL through influencing SA can be considered as a strategic solution to address the challenges and obstacles facing firms (Idris et al., 2013; Troise et al., 2022). Moreover, previous studies emphasize the ability of firms to achieve SA by adopting a SL approach (Hussein et al., 2023; Kuwada, 1998). Therefore, the seventh hypothesis of the research is proposed as follows:

**$H_7$:** SA mediates the relationship between SL and performance of SMEs.

**2-8. The Moderating Role of AC**

In today's complex and constrained business environment, it is vital for organizations to adopt a SL approach. It could be argued that dynamic management of knowledge is necessary to enhance company performance and decision-making (Islam & Munir, 2022). In fact, learning orientation includes creating and using organizational knowledge to maintain and improve competitive advantage (Stelmaszczyk, 2020). Various factors influence a firm's ability to acquire and generate knowledge, with AC playing a crucial role, particularly in complex and dynamic conditions (Zahra & George, 2002). AC comprises organizational processes for acquiring, assimilating, transferring, and leveraging knowledge to develop dynamic capabilities that enhance the organization's ability to achieve competitive advantage and improve performance (Müller et al., 2021). Researchers believe that companies with high absorptive capacity can acquire more knowledge from external sources and improve their ability to achieve competitive advantage and surpass their competitors (Kharabsheh et

al., 2017; Liu et al., 2013). On the other hand, the increase in AC allows firms to have more up-to-date information. In this context, SA can be influenced by the level of access to knowledge and AC, through which the firm is driven to achieve competitive advantage and better performance (Abourokbah et al., 2023). In addition, some researchers admit that AC can have a significant impact by facilitating learning about new technologies and acquiring new knowledge to produce new products/services in the way of creating SI and improving firm performance (Kostopoulos et al., 2011; Stock et al., 2001). The results of empirical research also indicates that AC plays an important role in improving innovative performance, financial performance, identifying new information, and organizational growth (Abourokbah et al., 2023; Kostopoulos et al., 2011). Therefore, the eighth to tenth hypothesis of the research are presented as follow:

**$H_8$:** AC moderates the relationship between SL and performance of SMEs.

**$H_9$:** AC moderates the relationship between SA and performance of SMEs.

**$H_{10}$:** AC moderates the relationship between SI and performance of SMEs.

**Table 1. Summary of the research gap**

| Author(s) | Title | Findings |
|---|---|---|
| Siren (2014) | Gaining competitive advantage through strategic learning plan in small firms | Small firms can achieve competitive advantage by improving the strategic knowledge of their human resources through a strategic learning approach. |
| Hamburg & O'Brien (2014) | Examining the importance of using strategic learning to achieve growth in SMEs. | The results indicate that SMEs can access new skills by using external expertise through practical communities, social learning, and e-learning. |
| Arman & Shafiei (2017) | The impact of strategic learning and strategic agility on the competitive capabilities of knowledge-based companies. | Strategic learning leads to improved strategic agility and enhances the competitive capabilities of knowledge-based companies. |
| Gupta & Bose (2019) | The impact of strategic learning on digital market pioneering | Identifying strategic learning and its impact on the digital model adopted by the company serves as a primary driver for changing the business model. |
| Al-Hawary & Al-Rasheedy (2021) | Examining the impact of strategic learning on human resources in achieving dynamic capabilities. | The significant impact of strategic learning dimensions on achieving dynamic capabilities in companies. |
| Islam & Munir (2022) | A model for innovation ambidexterity considering the importance of strategic learning capabilities during COVID-19. | A positive and significant relationship between strategic entrepreneurship and strategic learning with innovation. |
| Akkaya & Apostu (2022) | Examining the effect of strategic innovation on company performance, considering the moderating role of managerial trust. | A significant positive relationship between strategic innovation and company performance, with the confirmation of the mediating role of managerial trust. |
| Hussein et al. (2023) | How strategic learning and strategic thinking influence achieving strategic agility. | Focusing on strategic learning approach and enhancing strategic thinking in government organizations to achieve strategic agility and increase long-term organizational adaptability. |
| Rafiki et al. (2023) | The effects of organizational learning, entrepreneurial orientation, and personal values on the growth of SMEs. | Organizational learning is significantly associated with entrepreneurial orientation, risk-taking propensity, and proactiveness in entrepreneurial orientation. Additionally, both innovation-oriented entrepreneurship and proactive entrepreneurship significantly mediate the relationship between organizational learning and company growth. |

As shown in Table 1, despite many papers on SL, SA, and SI, the literature in these fields is still lacking. No paper simultaneously examines the effects of SL, SA, and SI, along with the moderating role of AC on the performance of SMEs. Many studies have used these variables separately as an independent variable and company performance as a dependent variable. These relationships, which are frequently investigated, will be accompanied by imperfections. Additionally, the lack of identification and evaluation of mediating pathways and variables through which business performance occurs has led to repetition.

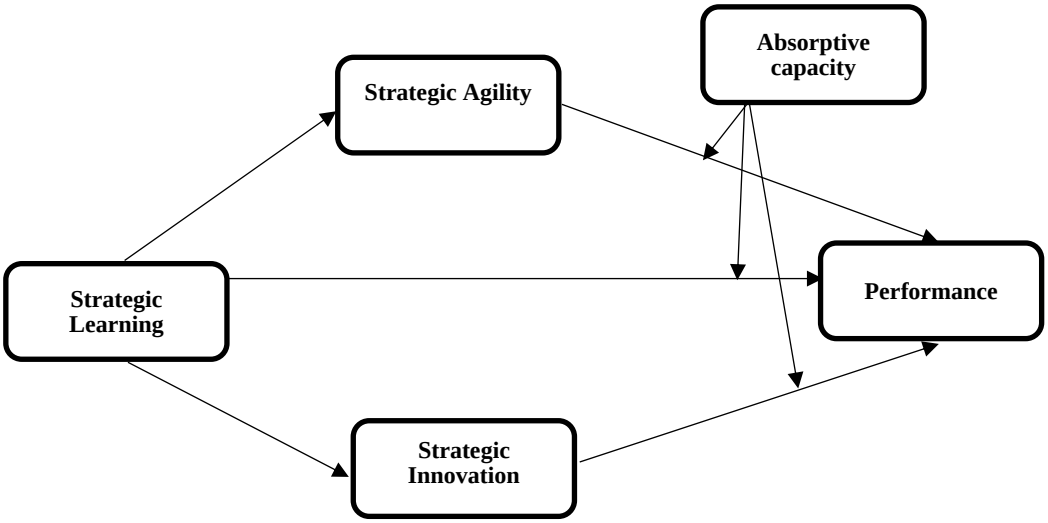


**Fig. 1. Research Model**

## 3. Research Methodology

The present quantitative study has an applied objective. Moreover, in terms of its nature and method, it is a descriptive survey. The statistical population of the research was SMEs in the food industry sector of Ilam province. A questionnaire with a 5-point Likert scale was used to collect data and measure SL (Islam & Munir, 2022), SI (Thoumrungroje & Racela, 2022), SA (Al-Omoush, 2020), and Performance (Akram et al., 2018). The research model was also analyzed following the opinion of Sarstedt et al. (2021), using the structural equation modeling approach with Smart PLS 3 software. Based on this, factor loadings were checked before analyzing the model. Subsequently, the research model was examined. To this end and as the first step, the measurement model of the research was examined through reliability and validity evaluation, including convergent validity and discriminant validity, and the quality of the measurement model. In the next step, the researchers focused on the structural model of the research. First, the hypotheses and then the predictive capabilities of the structural model were examined. In the third step, the overall research model was evaluated. Since rule-of-thumb estimates provide an approximate sample size but it is unable to account for effect size, confidence level, number of predictor variables, or other known indicators that influence test power, the G-Power software version 3.1 was employed to determine the sample size based on the test (Hair et al., 2014). Therefore, in this research, considering a 5% error level, an effect size of 0.05, and five predictor variables, the sample size was calculated to be 138 observations, as shown in Figure 2.

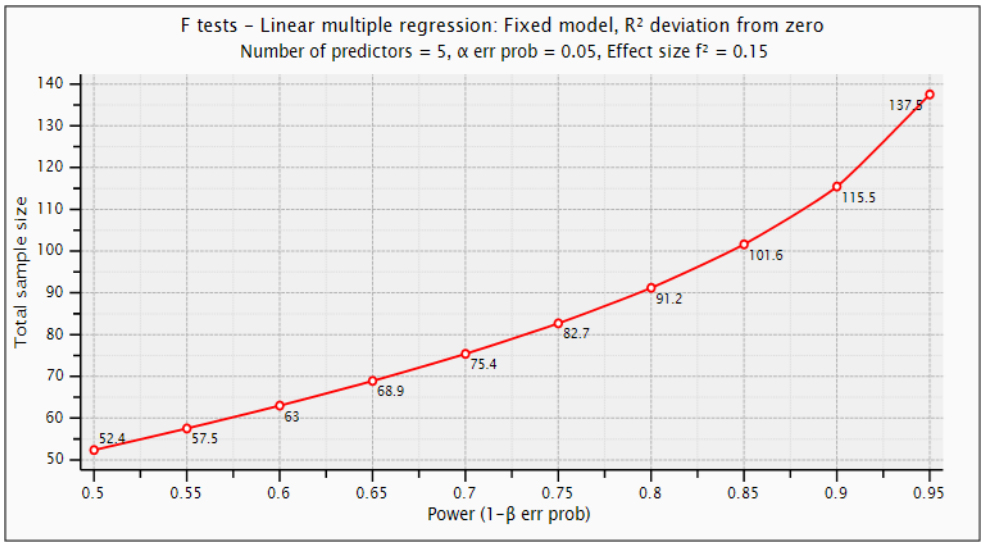


**Fig. 2. Recommended Sample Size**

Table 2 illustrates the characteristics of the people participating in the survey. To get a proper overview of the research findings, the gender, age, education, and experience of the participants were examined. As observed in the descriptive statistics section, 78 participants (57%) in the study were male, and 60 participants (43%) were female. Of these, 14 participants (10%) were under 30 years old, 63 participants (46%) were between 30 and 40 years old, 38 participants (27%) were between 41 and 50 years old, and 23 participants (17%) were over 50 years old. Regarding educational level, 74 participants (54%) had a bachelor's degree, 58 participants (42%) had a master's degree, and 6 participants (4%) had a doctorate degree. Additionally, in terms of work experience, 56 participants (41%) had less than five years of experience, 70 participants (50%) had between 5 and 10 years of experience, and 12 participants (9%) had more than 10 years of experience.

**Table 2. Demographic Characteristics**

| Items | Description | Sample | Percentage (%) |
|---|---|---|---|
| Gender | Male | 78 | 57 |
| | Female | 60 | 43 |
| Age | Less than 30 | 14 | 10 |
| | 30-40 | 63 | 46 |
| | 41-50 | 38 | 27 |
| | More than 50 | 23 | 17 |
| Degree of Education | BA | 74 | 54 |
| | MA | 58 | 42 |
| | Ph.d | 6 | 4 |
| Experience | Little experience>5 years | 56 | 41 |
| | Sufficient Experience: 5–10 years | 70 | 50 |
| | Wide Experience<More than 10 years | 12 | 9 |

## 4. Data Analysis

SmartPLS version 3 software was used to test the research model. For this purpose, factor loadings were first examined. Then, the reliability and validity of the model were evaluated using Cronbach's alpha (CA) and composite reliability (CR) tests. Regarding the validity of the research model, in the convergent validity part, the Average Variance Extracted (AVE) test was used (Table 3). The discriminant validity was also evaluated using the Fornell–Larcker tests and the Heterotrait–Monotrait Ratio (HTMT) test (Table 4).

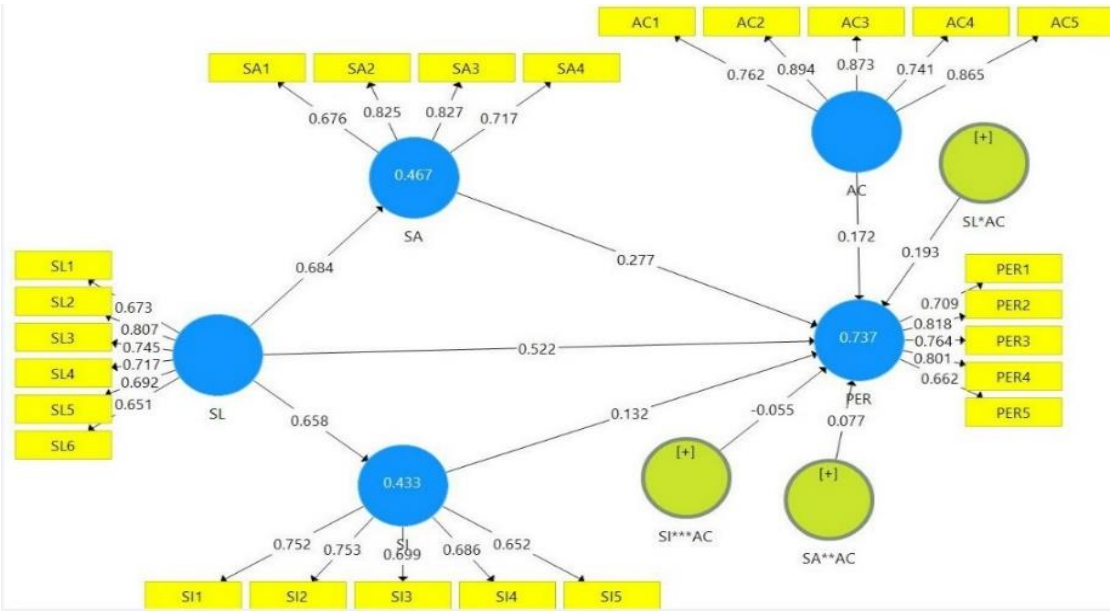


**Fig. 3. Confirmatory Factor Analysis**

**Table 3. Reliability and Convergent Validity**

| Items | Factor Loading | Cronbach's Alpha | Rho_A | CR | AVE |
|---|---|---|---|---|---|
| **Strategic Learning (SL)** | | 0.810 | 0.809 | 0.863 | 0.513 |
| **SL1** | 0.673 | | | | |
| **SL2** | 0.807 | | | | |
| **SL3** | 0.745 | | | | |
| **SL4** | 0.717 | | | | |
| **SL5** | 0.692 | | | | |
| **SL6** | 0.651 | | | | |
| **Strategic Agility (SA)** | | 0.762 | 0.766 | 0.848 | 0.584 |
| **SA1** | 0.676 | | | | |
| **SA2** | 0.825 | | | | |
| **SA3** | 0.827 | | | | |
| **SA4** | 0.717 | | | | |
| **Strategic Innovation (SI)** | | 0.761 | 0.762 | 0.835 | 0.503 |
| **SI1** | 0.752 | | | | |
| **SI2** | 0.753 | | | | |
| **SI3** | 0.699 | | | | |
| **SI4** | 0.686 | | | | |
| **SI5** | 0.652 | | | | |
| **Absorptive Capacity (AC)** | | 0.886 | 0.916 | 0.916 | 0.688 |
| **AC1** | 0.762 | | | | |
| **AC2** | 0.894 | | | | |
| **AC3** | 0.873 | | | | |
| **AC4** | 0.741 | | | | |
| **AC5** | 0.865 | | | | |
| **Performance (PER)** | | 0.807 | 0.806 | 0.867 | 0.567 |
| **PER1** | 0.709 | | | | |
| **PER2** | 0.818 | | | | |
| **PER3** | 0.764 | | | | |
| **PER4** | 0.801 | | | | |
| **PER5** | 0.662 | | | | |

**Table 4. Discriminant Validity**

| Criterion | Latent Variables | SL | SA | SI | AC | PER |
|---|---|---|---|---|---|---|
| Fornell–Larcker | Strategic Learning (SL) | 0.716 | | | | |
| | Strategic Agility (SA) | 0.684 | 0.764 | | | |
| | Strategic Innovation (SI) | 0.658 | 0.440 | 0.709 | | |
| | Absorptive Capacity (AC) | 0.234 | 0.332 | 0.103 | 0.829 | |
| | Performance (PER) | 0.703 | 0.707 | 0.610 | 0.331 | 0.753 |
| HTMT | Strategic Learning (SL) | 1 | | | | |
| | Strategic Agility (SA) | 0.829 | 1 | | | |
| | Strategic Innovation (SI) | 0.762 | 0.536 | 1 | | |
| | Absorptive Capacity (AC) | 0.253 | 0.395 | 0.133 | 1 | |
| | Performance (PER) | 0.845 | 0.847 | 0.737 | 0.381 | 1 |

As Tables 3 and 4 represent, the values of these tests are acceptable for all variables. Therefore, the research model has adequate reliability and validity. To ensure the desired quality of the measurement model, the structural model of the research was examined. For this purpose, the coefficient of determination ($R^2$), and the cross-validated redundancy index, known as Astone-Geisser's Q2, were employed. According to Table 4, $R^2$ values were significant. The values of $Q^2$ indicate that the prediction accuracy of the path model for this particular structure is acceptable and the quality of the structural model is suitable.

**Table 5. Structural Model Prediction Indices**

| Latent Variables | $R^2$ | $Q^2$ |
|---|---|---|
| **Strategic Learning (SL)** | - | - |
| **Strategic Agility (SA)** | 0.467 | 0.247 |
| **Strategic Innovation (SI)** | 0.433 | 0.179 |
| **performance (PER)** | 0.737 | 0.379 |

To test the hypotheses, path coefficients and significant values were examined and a bootstrapping method was employed to calculate significant values for all paths.

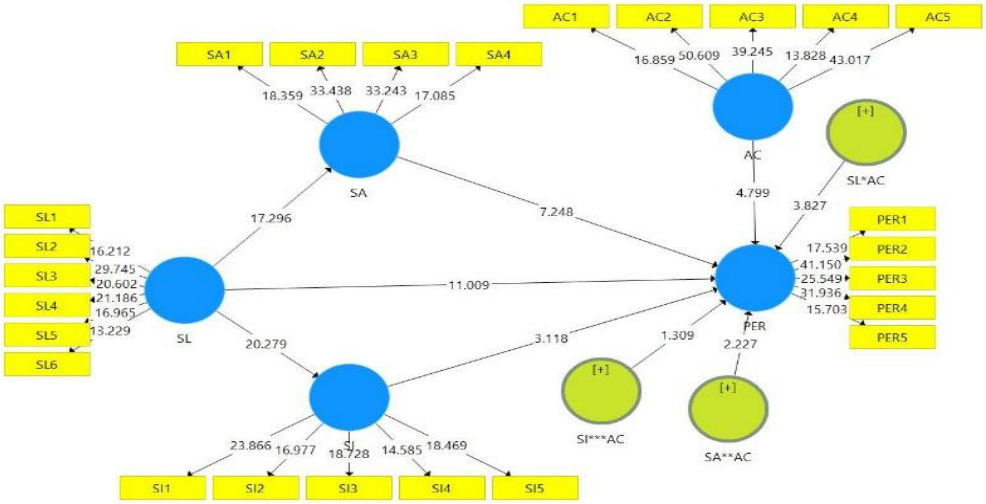


**Fig. 4. The Results of Examining the Hypotheses**

Figure 3 indicates the bootstrapping output of the structural model for significant coefficients. Based on this, the hypothesis test results are summarized in Table 6.

**Table 6. Significance Tests of Hypotheses**

| Hypothesis | Path | Path Coefficient | p-Value | Result |
|---|---|---|---|---|
| **H1** | SL → PER | 0.522 | 0.000 | Supported |
| **H2** | SL → SI | 0.658 | 0.000 | Supported |
| **H3** | SL → SA | 0.684 | 0.000 | Supported |
| **H4** | SI → PER | 0.132 | 0.002 | Supported |
| **H5** | SA → PER | 0.277 | 0.000 | Supported |
| **H8** | SL*AC→ PER | 0.193 | 0.000 | Supported |
| **H9** | SA**AC→ PER | 0.077 | 0.026 | Supported |
| **H10** | SI***AC→ PER | -0.055 | 0.190 | Not Supported |

To evaluate the overall model fit, the GOF index and the standardized root mean square residual (SRMR) test were used. Researchers usually consider three values of 0.1, 0.25, and 0.36 as small, medium, and large values, respectively for the GOF index (Wetzels et al., 2009). According to the results, the value of GOF (0/558) indicates a strong fit of the model. Additionally, the value for the SRMR test (0/072) is less than 0.08, indicating that the structure of the research model has a good fit.

### 4-1. Mediating Effects

In this research, the researchers utilized the Sobel test to investigate the mediator role. In this method, the model should be executed once without the presence of the mediator and again with the presence of the mediator variable in the software. By examining the results, it was revealed that the value of T-VALUE is acceptable for direct paths. In other words, SA and SI variables play a mediating role in the relationship between SL variables and performance. The results of Table 7 also indicates the value of Z-Value. Considering that the value of Z is more than 1.96, the null hypothesis is rejected at the error level of 0.05, and the mediation effect is confirmed. Therefore, the sixth and seventh research hypotheses are confirmed.

**Table 7. Mediating Effects**

| Variable | Z-Value | Result |
|---|---|---|
| **H6** | 4.70 | Supported |
| **H7** | 3.10 | Supported |

## 5. Discussion and Conclusion

### 5-1. Discussion

SMEs, as important sources of GDP and economic growth, can transform opportunities into competitive advantages by adopting appropriate strategies. These companies play a vital role in the economies of developing countries. Enhancing their performance and increasing their numbers can lead to greater employment, improved product quality, and overall economic and social development (Cepel et al., 2020).

Meanwhile, the food industry is considered one of the vital sectors within the field of SMEs, which plays a key role in processing raw materials and providing food products. Consequently, many researchers emphasize the importance of its role in creating employment and enhancing economic efficiency (Menrad, 2004; yaqoob et al., 2022). On the other hand, the dynamic nature of the food industry and the presence of stringent quality standards necessitate agility and continuous innovation for SMEs operating in this sector. Consequently, the SL approach can be regarded as a critical factor for achieving and sustaining successful performance. By applying SL, SMEs can anticipate and prepare for possible problems, including market fluctuations, supply chain issues, or environmental challenges. This proactive approach not only reduces risks but also puts these businesses in a position to take advantage of opportunities that arise from market changes and innovations (Beigi et al., 2023; Gomes et al., 2021).

On the other hand, considering the dynamic environment of small and medium-sized enterprises (SMEs), SA is also of high importance. SA refers to the ability of organizations to respond quickly and effectively to environmental changes and, consequently, adapt to them. SMEs that stay updated and can swiftly react to market and technological changes typically exhibit the best performance (Elali, 2021). Additionally, SI is also discussed as a key factor in enhancing the performance of SMEs. This type of innovation involves the creation and implementation of new strategies, the development of new products and services, and changes in the business model, which can help businesses operate more competitively and dynamically against their competitors (AlQershi, 2021; Islam & Wahab, 2021).

Therefore, the significant relationship between SL, SA, SI, and the performance of SMEs lies in the fact that SL helps organizations become aware of environmental changes. These changes can be incorporated into their strategies and operations by leveraging SA. Furthermore, this process leads to SI, which not only facilitates the development and enhancement of strategies and products but also boosts business performance and competitiveness. Ultimately, the expected outcomes of implementing a SL approach in SMEs include empowering these businesses to respond strategically to economic changes and fluctuations, exploiting environmental opportunities, and significantly contributing to economic growth and development.

### 5-2. Conclusion

This paper highlights the pivotal role of SL, SA, and SI in the performance of SMEs. As the results indicate, adopting a SL approach in SMEs enhances their capacity to introduce new products and services to the market, thereby improving their overall performance.

According to the result of the first hypothesis, SL has a positive and significant effect on the performance of SMEs (β=0.522, and P value=0.000). This result is consistent with the findings of previous studies (e.g., Gupta & Bose, 2019; Hamburg & O'Brien, 2014). According to Hussein et al. (2023), SL can be utilized as a tool for reassessing the nature of the business, its strategic positions, and acquiring and internalizing knowledge. Similarly, Shlaka and AlZaidi (2022) view SL as an ongoing process to better adapt to the external environment, consequently enhancing the company's competitive position. SL helps SMEs in the food industry to develop more effective strategies for quality control, product development, and supply chain management while understanding market trends and environmental changes. This approach not only strengthens the competitive advantage of SMEs in the food industry but also increases their resistance to market fluctuations and external shocks, thereby ensuring their sustainability and long-term growth.

According to the result of the second hypothesis, SL has a positive and significant effect on SI (β= 0.658 & P value=0.000). This result is consistent with previous research (e.g., Han & Zhang, 2021; Lin et al., 2008). According to Han and Zhang (2021), SL can be regarded as a strong predictor of innovation, and consequently, leveraging SI will enhance the company's competitive capability.

Oktavio et al. (2019) also demonstrate that innovative actions and SI should always be supported through SL and an entrepreneurial orientation. Based on this, it can be argued that SL has a positive effect on SI in SMEs by providing essential information, adopting new technologies, strengthening innovation culture, creating effective relationships, and identifying new opportunities. These effects help SMEs to continuously introduce new products and services to the market and adapt to the developments in the food industry, which ultimately leads to improved performance and increased competitiveness.

According to the result of the third hypothesis, SL has a positive and significant effect on SA (β= 0.684, and P value=0.000). This result is in line with previous research (e.g., Arman & Shafiei, 2017; Hussein et al., 2023; Idris et al., 2103). Related to this result, Kuwada (1998) highlights that SL plays a fundamental role in enabling organizations to achieve agility in the process of product improvement. Additionally, Pietersen (2008) emphasizes the role of SL in achieving SA in organizations by finding new ways to lead the organization through rapid changes. SL is an essential element that affects SA as a strategic solution to address the firm's challenges in both internal and external environments. Therefore, SMEs in the food industry should increase their ability to respond to external changes by creating a context for increasing the knowledge of their employees to strengthen SL.

Examining the result of the fourth hypothesis reveals that SI has a positive and significant effect on the performance of SMEs (β=0.132, and P value=0.002). This result is consistent with the findings of previous research (e.g., AlQershi, 2021; Damanpour & Evan, 1984; Wu et al., 2003). Shisia et al. (2014) believe that SI is a tool that can ensure long-term survival and success by integrating the company's resources and capabilities and capitalizing on opportunities in the business environment. Additionally, Drejer (2006) states that SI leads to overall company development and improved performance by revitalizing the company's business concept in line with market changes. In the competitive environment of the food industry where consumer preferences are constantly changing, SMEs that pay attention to SI can create unique offers in line with new trends. Using new technologies and optimizing processes through strategic innovation enhances operational efficiency. SMEs that use innovative methods, such as advanced manufacturing techniques or digital supply chain management, can simplify their processes, reduce costs, and improve product quality. This operational flexibility allows them to quickly react to disruptions in the supply chain and changes in market demand and, as a result, perform better.

According to the result of the fifth hypothesis, SA has a positive and significant effect on the performance of SMEs (β=0.277, and P value=0.000). This result is consistent with the findings of previous studies (e.g., Al-Romeedy, 2019; Clauss et al, 2019). The research findings of Kohtamäki et al. (2020) indicate that the SA approach improves company performance by enhancing the company's capabilities to upgrade existing abilities and reconfigure resources. Furthermore, Clauss et al. (2019) state that SA is a powerful predictor in identifying environmental threats, increasing the organization's readiness for effective responsiveness. This, in turn, reduces vulnerability to changes compared to competitors and leads to better performance. SMEs in the food industry can enhance their responsiveness by leveraging strategic agility to manage the flow of goods, information, personnel, and other resources. This approach allows them to address consumer demands effectively. Consequently, strategic agility serves as a crucial tool for increasing company competitiveness, achieving excellence in a fluctuating and unstable market, and gaining a competitive edge.

Examining the results of the sixth and seventh hypotheses indicates that SA and SI mediate the relationship between SL and the performance of SMEs. Moreover, the purpose of testing the eighth to tenth hypothesis in this research is to investigate the moderating effect of AC in the relationship between SL, SA, SI, and the performance of SMEs. As the results show, AC positively moderates the relationship between SL, SA, and the performance of SMEs. Therefore, according to the confirmation of the eighth and ninth hypotheses, high absorptive capacity can enable firms to acquire more knowledge from external sources, including customers, suppliers, and other business partners, thereby facilitating greater integration of the supply chain. Increasing the AC leads to the identification of business opportunities in the market, and in this way, firms can better understand environmental uncertainty and market trends, leading to acquiring market opportunities, reducing costs, increasing market share, profitability, and product development. Therefore, this category should be prioritized for SMEs.

Despite these results, path analysis of hypothesis tenth indicates that AC does not moderate the relationship between SI and the performance of SMEs. Therefore, the tenth hypothesis of the research is not confirmed. One potential reason for this lack of significance could be attributed to the nature of SI and AC in SMEs. In such firms, innovations typically occur incrementally and on a smaller scale, often constrained by limited resources and significant operational pressures. Another key factor contributing to the non-significance of AC's moderating role is the environmental and industrial conditions in which SMEs operate. In certain industries, the rapid pace of technological changes and innovations necessitates swift company responses. Consequently, innovation in these settings tends to be more reactive and immediate rather than a long-term process based on external knowledge acquisition. Therefore, a combination of environmental, structural, cultural, and operational factors can undermine the significance of AC's moderating role in the relationship between SI and performance in SMEs. In this direction, Lane et al. (2006), in their review of previous research, noted that AC, as a moderator, might not be significant in all contexts and for all types of organizations. They emphasized that the impact of AC depends on various factors, such as the type of industry, the size of the organization, and the nature of innovation, and that it may not have a substantial effect in certain situations.

## 6. Implications

### 6-1. Theoretical and Practical Implications

This study contributes to the literature related to SL, SA, and SI to a large extent and provides several implications for managers and experts in the field of SMEs. As mentioned earlier, today's competitive business environment has forced firms to adopt a suitable strategy to remain in such conditions. Therefore, SL is one of the requirements of companies in dynamic environments. Furthermore, the organizations that have experienced success realized that the continuation of such success in the long term depends on SA. In this study, the researchers investigated the direct and indirect effects of SI, SA, and SI on the performance of SMEs, considering the role of moderating AC. Theoretically, the results of the study highlight the effects of SL in the context of specific SMEs in an emerging economy, which helps to understand the use of emerging strategies. The research findings also improve the insights obtained in other developing economies and explain how SL can provide different effects in different economic and social contexts and different industries. In addition, this study has significant practical implications for managers and policymakers of SMEs. Based on the results, managers can adopt policies and strategies to improve SA and SI and finally obtain sustainable performance. According to the research results, SL has the highest path coefficient ($\beta$=0.522) compared to other variables in the model, impacting the performance of small and medium-sized enterprises the most. Therefore, managers should recognize the importance of their role in providing SL context as a highly important resource for solving problems, achieving competitive advantage, and creating innovative capabilities. Therefore, it is suggested that managers of SMEs continuously scan the business environment to create new knowledge for SL development. Additionally, policymakers and decision-makers are recommended to foster a culture of continuous improvement by regularly assessing the effectiveness of SL initiatives and processes. They should seek feedback from customers, employees, and other stakeholders to identify areas for improvement, refine strategies, and increase the impact of SL efforts over time. Based on the results, SA, with a path coefficient ($\beta$=0.277), can be considered the next priority. SA in SMEs can serve as a tool for increasing flexibility and responsiveness to market changes. Hence, it is suggested that SMEs leverage modern technologies to improve processes, increase efficiency, establish better connections with customers and collaborators, develop systems, and promote collaboration and interaction between different departments to implement SA. Finally, SI, with a path coefficient of $\beta$=0.132, is considered a key factor in the development and growth of SMEs. By creating and implementing new strategies, developing innovative products and services, and changing the business model, SMEs can actively demonstrate competitive and better performance in markets.

### 6-2. Managerial Implications

The complexity and unpredictability of the modern business environment imply that past methods of thinking and management techniques are insufficient to meet present or future demands. Businesses must

ensure the continuity of their operations and, by embracing innovative strategic management concepts such as SL, they can attain a leading position in their industry. In this context, an organization engaged in continuous learning and equipped with information and knowledge can understand and anticipate its surrounding environment, enabling it to take initial actions in response to changes. Therefore, an organization can act intelligently and sustain growth and development. Based on research findings, it is recommended that managers of SMEs establish processes and mechanisms for gathering, analyzing, and interpreting information about the external environment, including market trends, competitors' actions, and regulatory changes. Through market research, industry reports, and networking events, they should encourage employees to stay informed about industry advancements, customer preferences, and emerging technologies. Additionally, it is suggested to invest in leadership and employee development programs and initiatives to enhance the capabilities of managers and leaders in effectively managing SL innovations. Furthermore, providing training and coaching opportunities for developing skills such as strategic thinking, decision-making, change management, and employee engagement is recommended. In today's era, rapid and dynamic environmental changes are recognized as the most prominent feature of businesses. Therefore, from a management perspective, ensuring that SMEs can adapt to current conditions requires the capabilities of agility and SI. SA and SI are among the most effective approaches to adapt to environmental changes. Accordingly, it is recommended that managers of SMEs explore new forms of value creation, resource acquisition, and configuration guided by the SA approach and adopt policies to enhance SI, which can be a vital source for product development, learning new techniques, and increasing market share.

## 7. Research Limitations

This research has limitations that could provide opportunities for future research. First, the current research is only focused on one specific industry (the food industry). Therefore, for increased generalizability of the results, there is a need to re-examine the relationships between variables in different industries, particularly in the service sectors. Second, the research findings on SL may be context-specific and may not have suitable compatibility in different organizational environments or cultural contexts, thereby limiting the applicability of research findings in different organizational environments. Additionally, considering the limited sample size (the food industry in SMEs) and the cross-sectional nature of the research period, conducting a longitudinal study with a larger sample size could provide sufficient accuracy and comprehensiveness regarding the research results. Additionally, one of the limitations of this research is the lack of a significant impact of AC as a moderating factor in the relationship between SI and performance in SMEs. To address this limitation and enhance the understanding of the dynamics within SMEs, it is recommended that future studies conduct a more thorough investigation into the conditions under which AC can serve more effectively as a moderating factor. Finally, in this research, the information regarding the age of SMEs was not available. Additionally, based on the results of previous studies regarding the role of entrepreneurial orientation on the performance of SMEs (Akbari & Beigi, 2023), future researchers can expand the model to examine the mediating role of entrepreneurial orientation.

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