

# Strategic Ambidexterity and Organizational Performance of Manufacturing Companies in Jakarta, Indonesia

Ita Mariza<sup>1</sup>, Gembong Baskoro<sup>2\*</sup>

<sup>1</sup> Industrial Engineering, Polytechnic Gajah Tunggal

Jl. Gajah Tunggal No.16, Kota Tangerang, Banten 15133, Indonesia

<sup>2</sup> Master of Mechanical Engineering Department, Swiss German University

The Prominence Tower Alam Sutera, Jl. Jalur Sutera Barat No. 15,

Kota Tangerang, Banten 15143, Indonesia

Email: ita.mariza@poltek-gt.ac.id<sup>1</sup>, gembongbaskoro8@gmail.com<sup>2\*</sup>

\*Corresponding author

---

**Abstract:** This study identifies factors that improve competitive strategies in manufacturing companies, known as strategic ambidexterity (SA), and their impact on organizational performance to improve production systems as a source of competitive advantage. This survey study was conducted through employee perceptions of SA, by exploiting and exploring firm capacity and capability. Data were collected through a survey directly to the respondents involving 200 employees of manufacturing companies in Jakarta, Indonesia. The method used was a field survey, and the data were analyzed using Structural Equation Modeling (SEM) with Linear Structural Relations (LISREL 9.2). The findings are exploiting organizational capacity has significant effect on SA, exploring organizational capability has a significant effect on SA, and SA has a significant effect on organizational performance. The limitations of this research are it is characterized by cross-sectional and perceptual analysis. The location of all companies involved is only in Jakarta. The managerial implications are that optimal firm performance can be achieved by implementing SA through exploiting organizational capacity to maximize competitiveness in existing markets by optimizing the service quality to customer, improving processes to respond to market feedback, and understanding market needs, and exploring capability to take opportunities in new markets through product innovation, discovering and integrating new technologies, maintaining customers relationships, being flexible and adaptive to the market needs.

**Keywords:** Dynamic capability, organizational capacity, strategic ambidexterity, superior firm performance.

---

## Introduction

Manufacturing industry in Indonesia currently faces a high pressure due to open competition with the regional manufacturing firms in the recently emerging ASEAN Economic Community (AEC) [1]. The free flow of goods, services, investment, capital, and labor from companies of the member countries in AEC agreement has a big impact on Indonesian manufacturing firms, leading to tight and challenging market competition [2]. Hence the Indonesian manufacturing firms must develop superior competitiveness to defend themselves and even to expand their market.

For that purpose, to improving a firm's competitiveness, the literature shows that the success or failure of firms is influenced both by internal factors of the firms that are 'controllable factors' (such as human resources, capital/assets, leadership style, and strategy orientation application) as well by external factors [3], which are 'uncontrollable factors' (such as: regulations, competitors, market conditions; and uncertainty in the environment). On the tension between those two dimensions when firms seek to act efficiently, the leaders and managers of the firm need to ensure empowered by their ability, capability, capacity, as well as the organizational assets, to take advantage of opportunities for business growth from the markets [4].

Organizational capabilities refer to an organization's ability to effectively leverage resources, knowledge, skills, and processes to achieve strategic objectives and respond to changes in its environment. These capabilities are a combination of competencies, culture, systems, and leadership that enable an organization to consistently perform and maintain a competitive advantage. The key elements of organizational capabilities are resources,

skills and competencies; processes and culture; and leadership. Organizational capabilities play a crucial role in influencing the overall performance and competitiveness of manufacturing companies. Some reviews indicate that organizational capabilities, such as R&D capabilities, human resource capabilities, process innovation capabilities, product innovation capabilities, and manufacturing capabilities, significantly impact firm performance. The findings showed that there is significant and positive relationship between organizational capabilities and firm performance [5]. In addition, active leaders in formulating and directing effective strategies are needed in achieving success. The right decision to implement the chosen strategy in the external environment, such as exploiting existing markets with existing products, as well as exploring new market opportunities with the existing and new products, will depend on effectively developing the firm's capabilities and capacities. Thus, effective leaders can improve and empower the skills of employees in order to generate an effective influence on firm performance [6].

Recently, many authors have mentioned that strategic ambidexterity as a relatively new concept can help to reconcile the above challenge; namely, by combining simultaneously the activities of exploiting (making the best use of) the existing market as well as exploring (generating new approach) on new market, or competing with both the current products and new products; while both involve different production and marketing approaches [7]. Furthermore, if firms are efficiently responsive to their current market and effectively prepare for new markets, or a combination approach called strategic ambidexterity, will improve firm performance [8]. This ambidexterity concept supports the earlier study that the combinations of exploration strategies (new markets) and exploitation strategies (existing market) through empowering all the capacity and capability of resources will improve the effectiveness of the organization in achieving superior firm performance [9]. In that sense, Chen *et al.* have proposed that applying this approach is called effective strategic ambidexterity [8].

How does an organization generate effective strategic ambidexterity? From the core of strategic management literature, Baia *et al.* explain in their journal about resource-based view approach which states that a firm's bundle of valuable resources is very important for exploiting and exploring activities to achieve superior firm performance [10]. Moreover, Stei *et al.* [9] confirm that by exploiting and exploring the bundle of valuable resources will form a powerful strategic ambidexterity. From dynamic capability view (DCV), Yunita *et al.* further enrich that the dynamic capabilities of the firm can foster the synergy between the firms' strategy and business environment volatility [11].

Then, from the manufacturing studies literature, production systems capability can be defined as the level of a production system's ability to carry out various types of operations for various final products [11]. The more dynamic the capability is in the production systems, the more it can produce different products or modifications of the existing products, which can better serve the changing customers' demands in the market. Meanwhile, the capacity of production systems in the strategic management perspective is referred to the ability to adjust the magnitude of the production machines to meet different products in a quantity mix of current and new products, rather than to adjust the different product mix to the existing (static) production capacity, which might result in slack or unused production capacity [12].

In another dimension, a firm's manufacturing strategy has been shifting its attention from a market-based strategy or being dictated by the market rules; to one that gives more attention to resource-based manufacturing strategy, focusing on building resources, capabilities and flexible capacity in order to be highly flexible in pursuing superior competitive advantage in the changing [n that context, strategic ambidexterity is needed to help the firm to engage in a variety of product design capability at an optimal level within the constraints of production capacity. The question is: how does the firms' employees perceive and be involved in the strategic ambidexterity process? The answer to this question will explain various concepts related to effective strategic ambidexterity in creating competitive advantage to achieve higher performance, through exploiting and exploring organizational capabilities and manufacturing company resources capabilities.

## Methods

### Capacity and Capability of the Firm

In the ASEAN Economic Community era, where competition is increasingly tight, this pressures manufacturing companies in ASEAN countries to maximize their capabilities and capacities (tangible and intangible resources) through integrated systems and approaches in their production process and management style [1], [2]. The

integrated manufacturing system allows greater flexibility in using capacity and capability (Princes [13]), and rapid adjustment to customized production capacity and functionality in creating competitive advantage as their strategy to achieve high performance and sustainability of business [14]. Furthermore, Baia *et al.* [10] explained that in an uncertain environment and limited capacity the firms need to emphasize the importance of manufacturing flexibility as a strategy approach to increase the firm performance [15].

The resource-based view (RBV) concepts explain that firms should develop organizational resources in such a way as to be valuable (to customers), rare (not owned by rivals), inimitable (imperfect imitation by rivals) and non-substitutable (VRIN). These factors are very effective as a driving force of competitive advantage and have a significant impact on firms' performance [10]. Based on this idea, Yunita *et al.* [11]; Wojcik [12]; Javier *et al.* [16] found that the RBV concept has emerged as one of the most dominant theoretical perspectives in the field of strategic management. The behind of RBV concept is reflecting the bundle of resources owned by the organization to yield adaptive capabilities [10]. Some researchers such as Isaac *et al.* [17]; Baia *et al.* [10] explain that most of the bundle of resources would serve to generate dynamic capabilities in achieving high productivity outcomes.

The capacity of the firms refers to the internal ability to exploit, explore and empower the firm's resources through flexibility in fostering integration processes among management functions such as production and marketing [5]. While Ash [18] refers to dynamic capabilities as the ability to foster the synergy between corporate strategy and changes in the business environment through integration, adaptation, reconfiguration, acquisition and release of resources to produce new value creation strategies. This means that to be successful in reaching sustainable growth in business and there is no exception to the manufacturing business, the organizational capacity and capability should be more flexible in keeping productive synergy among components, to be ready to change and adjust with the business environment changes and market demand [18].

Conceptually, Singh *et al.* [5]; Sibghatullah and Raza [6]; Ash [18] found that high capabilities (action to respond to the external environment) and effective capacity to integrate management functions would enhance competitive advantage. The flexibility of capacity and capability in manufacturing companies is very important because it could reduce the potential manufacturing risk of losses caused by unplanned events such as machine failure [19]; quality issues and rework problems; and operator absenteeism [20]. In addition, manufacturing flexibility is the capacity to respond to current or potential changes that may result from internal constraints or pressure from an uncertain external environment [15]. In addition, Kumar *et al.* [15] and Hose *et al.* [21] categorized manufacturing flexibility into many aspects namely: machine, material handling, operation, process, product, routing, volume, expansion, program, production and market flexibility.

Referring to the above explanation and for the purposes of this research, organizational capacity as the ability to exploit, explore and empower the firm's resources through flexibility integration processes in creating the competitive advantage, is defined as ambidexterity strategy to improve the firm's performance in manufacturing companies. The organization's capacity would depend on the leadership style/concept, technology applied, operations approach, engineering staff skills, and productivity goal.

Organizational capabilities can be observed through the skills or expertise of the employees [5]. In this Gen Z era, young people (Gen Z) are influenced by concepts or approach that develop innovation and information technology [22]. The path dependence of capabilities and employees' skills can be stretched, according to Suhairi *et al.* [23], to the marketing of the firm such as customer service, product branding, new product development, customers networks and the supply-chain. In other words, organizational capabilities are effective activities resulting from the resource integration processes, in which the role of the employees is central.

Furthermore, Singh *et al.* [5] explained the organizational capability in the manufacturing context is categorized into three scales as cost leadership, quality and innovation. Cost leadership (cost reduction) will be measured by employees' perception regarding material cost, labor, economical design of material use, capacity utilization rate, level of automation, sales promotion and effective implementation. Quality capabilities are experienced through input, product engineering skills, quality control, identifying and responding to market trends, and the quality and effectiveness of customer service. Meanwhile, innovation capability will be observed in purchasing, product engineering, process engineering, and marketing [24][25]. In facing global competition, manufacturing companies should be capable of managing technology and production system design with different resources, capabilities, and procedures [15].

Based on the above explanation and for the purposes of this research, organizational capability is defined as the ability of the company to respond to current and potential changes in dynamic environment through integrated

processes by exploiting and exploring the productive resources and skills (managerial and technical) in creating competitive advantage. In short, this involves pursuing an ambidexterity strategy.

### **Exploitation and Exploration of Capacity and Capability of the Firm**

Princes [7] and Cevikarslan [26] explained that firms could simultaneously balance exploration and exploitation over time and across domains in manufacturing firms. This means that the firms can continuously deploy their current capability and competency by using their valuable resources to improve the performance, and this is called the exploitation strategy. In the meantime, they can deploy dynamic capability to perform various manufacturing operations to meet new customers or new market extension (Ash [18]), by engaging in disruptive innovations in the existing operations system for producing new or modified products, and this is called the exploration strategy [23]. Exploration and exploitation strategies are two integrative concepts with different emphases on organization learning behavior.

Asif [27] explained that exploration is about searching for and opening up to gain new capabilities and competences for new undertakings, while exploitation is about using existing capabilities and competences for the best result. Among authors such as Moreira *et al.* [28] and Hill [29], they suggested that applying both types to firms' best advantage is referred to as firm ambidexterity. Many authors found the positive effect of the ambidexterity strategy on firm performance, among others are Princes [7], Chen *et al.* [8], Stei *et al.* [9] Baia *et al.* [10], and Kumar *et al.* [15].

Furthermore, Javier [16] explains that the current stream of exploitation should be focused on initiatives related to maintaining business strength as it relates to the firm's current market position, including incremental improvements to existing standards such as the products or the solution portfolio e.g. the addition of new features, improving the performance of existing functions, improve quality, and reduce cost to support efficiency, productivity, and product quality to ensure the firm gets things right. In contrast, the new stream of exploration focuses on new or innovative initiatives that provide benefits in the medium or long term. These efforts are linked to the firm's evolution to create new markets and new growth strategy options, including breakthrough innovation, paradigm shifts, new products or solutions, and adaptation to new technologies or production systems, and must be supported by freethinking and experimentation. In a very high degree of uncertainty, this should ensure that the firm is doing the right thing [14]. Moreover, in an uncertain environment (demand, technical and competitive uncertainty), exploitation and exploration of resources would generate new capacity and capability [16]. Applying operational ambidexterity effectively would optimize the manufacturing flexibility (machine, labor, material handling, and new product) and increase the firm's performance [15]. According to Mathias [30] exploitation and exploration are the operations level innovation searches in balance with optimal use of existing input-output conversion processes and searching and applying novel input-output conversion processes [29]. Furthermore Hill [29]; Mathias [30] and Barton [31] state that exploitation will be measured by continuously improving the reliability of existing products/services and operational processes, increasing the levels of automation in their operations, continuously surveying existing customers satisfaction and conducting exploration. All of this is realized by the ability to learn new operational technologies, create new products/services, and find creative ways to meet customer needs, aggressively venture into new product segments, actively use new technology and manufacturing systems, and commit to improving product quality and lowering production costs [13].

### **Strategic Ambidexterity (SA)**

On the above integration of exploitation and exploration emerges with the concept of ambidexterity strategy. Then Ash [18] and Uyanik [32] added that to achieve long-term success, companies depend on the ability to exploit existing capabilities and simultaneously explore new competencies. Recent research describes ambidextrous organizations that are simultaneously able to explore existing competencies and exploit new opportunities, which effectively impacts firm performance [8]. Success or failure in applying the strategy of ambidexterity depends on many things, such as: a) understanding of the leaders or management about the antecedent variables of SA; b) strategic goals or orientation will be achieved; c) alignment of organizational strategy and structure and people as supporting factors of SA [7]. Referring to Chen *et al.* [8], strategic ambidexterity (SA) is defined as "a firm's ability to combine exploration and exploitation strategies across product, market, and resource domains". For this research purpose, strategic ambidexterity is defined as the strategy that combines between exploitation and exploration approaches of the firms' capacity and capability in the dynamic environment to enhance the firm performance.

The structural antecedent of ambidexterity strategy can be explored from many perspectives. For this research purpose, by empowering the capacity and capability of the firm, the antecedent variables of strategic ambidexterity will be emphasized as follows: a) exploiting the existing market such as understanding customer needs and create values [8] [29]); factors involved in organizational process and meeting the markets requirements while taking care the relationship with customers, channels, and supplier [18]; b) exploring new markets. This approach will emphasize on innovation, such as innovative products, discovering new technologies and finding untapped markets [23].

In the implementation of the ambidexterity strategy, a question arises regarding the role and perception of the employees in the manufacturing companies. The success of an ambidexterity strategy cannot be separated from the role and involvement of the firm's employees [20]. While Valina *et al.* [33] explain that their involvement could motivate employees to act in certain way through the actions in day-to-day basis then strengthen the behaviors and attitudes of people throughout the organization. Highly motivated employees are more likely to learn and quickly adjust to new contingencies and trust as essential personal and interpersonal competence as a personal level is especially needed in marketing approaches and marketing dynamic capabilities. However, in a demanding and results driven orientation some people will perform well for limited time and certain conditions [27].

For this research purpose, the antecedent of strategic ambidexterity will be seen from two dimensions: exploitation of the firm's capacity (such as leadership, technology, operations, structure, and employees) and exploration of the organizational capability, such as innovation, developing and creating new markets, adaptability, and anticipating future competitors [30].

### **Organizational Performance in Manufacturing Companies**

Barton [31] and Uyanik [32] explained that organizational performance is defined as the comparison of the costs used for producing and marketing with the value that owners expected to receive from the company (Cania [34]). Some studies measured the firm's performance by subjective components such as employee satisfaction, customer satisfaction, employee commitment, perception of employees on financial outcome, and other behavior aspects; but some studies used objective measures such as financial or accounting metrics and market share as a reflection of organizational performance [34]. However, for manufacturing businesses, Gupta and Agarwal [35] explain that performance can be measured as both financial performance and operational performance. This means that the performance of manufacturing companies can be measured from a multidimensional perspective, also the implementation of quality practices has been linked to quality output as performance [36]. Furthermore, Uwamahoro *et al.* [37] stated that performance in manufacturing businesses can be measured effectively through integrating performance assessment tools like the Balanced Scorecard Framework and Key Performance Indicators (KPIs) to optimize productivity and decision-making. However, Yurdakul and Tansel [36] explained that the performance measurement model for manufacturing companies assesses strengths and weaknesses in critical activities, combining performance levels with industry-specific objectives to determine overall performance and areas for improvement. Moreover, Ejaz [4] explained that organizational performance in smart manufacturing is reflected by productivity, quality of products and services, efficiency (lower cost) and customer satisfaction. In term of manufacturing productivity, performance can be measured through overall equipment effectiveness (OEE), which is the ratio of fully productive time to planned production time, and is reflected in availability, performance and quality.

Basically, several researchers including Ejaz [4]; Chen *et al.* [8], Baia *et al.* [10] and Mathias [30] have explained that sustainable firm performance will be achieved if the company is able to create the competitive advantage through enforcing exploiting and exploring the capability and capacity of their tangible and intangible resources. Based on the above explanation and for study purposes, firm performance in the manufacturing companies is defined as the results (outcomes) of the execution of the firm strategy ambidexterity through exploitation and exploration of the capacities and capabilities as antecedent variables, and the performance will be measured from operational side are productivity, waste or losses, safety, quality, services, efficiencies and internal customer satisfaction. By applying the concept of fishbone diagram from Ishikawa through maximizing the function or ability also the capability of machines (equipment), material, method and manpower or people, measurement and environment (5 M + 1E), firm performance can be improved.

### **Research Model**

The research model is shown in Figure 1.

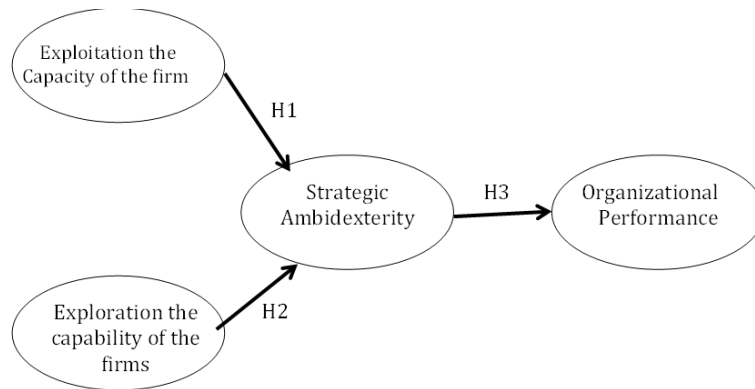


Figure 1. Research model

Operationalization of variables in the research model is summarized in table 1.

Table 1. Operationalization of variables

| No. | Variable Observe                       | Definition of Variable  | Instruments   | Reference  |
|-----|--|---|---|--|
| 1   | Exploitation the capacity of the firm  | The ability to exploit, explore and mobilize firm resources through flexibility integration in creating competitive advantage is an ambidexterity strategy to improve firm performance.   | To be measured by 6 variables: leadership style, technology used, operations, engineering staff skill, productivity process.          | Princes [7] [13]; Chen <i>et al.</i> [8]; Ash [18]; Cevikarslan [26]; Mathias [30]; Mathian [30].                            |
| 2   | Exploration the capability of the firm | The ability to respond to current and future dynamic environmental changes, by integrating the exploitation and the exploration of resources and skills (both managerial and technical) is essential for creating competitive advantage | Will be measure by 6 variables are integration, adaptation, skills of leadership, technology, cost reduction, quality and innovation. | Princes [7] [13]; Chen <i>et al.</i> [8]; Ash [18]; Cevikarslan [26]; Mathias [30].  |
| 3   | Strategy ambidexterity                 | Strategy ambidexterity is defined as the combination of exploitation and exploration approaches of the firm’s capacity and capability to enhance its performance.   | Strategy ambidexterity will be measured by 3 variables, are: effectiveness, efficiency, and achievement                               | Chen <i>et al.</i> [8]; Princes [13]; Hill [29]; Cevikarslan [26]; Asif [27]; Barton [31].                                   |
| 4   | Organizational Performance             | The results (outcomes) of the execution of firm strategy ambidexterity through exploiting and exploring capacities and capabilities as antecedent variables.  | Firm performance is measured by productivity, waste or losses, safety, quality service, efficient, internal customer satisfaction     | Chen <i>et al.</i> [8]; Isaac <i>et al.</i> [17]; Mathias [30]; Cania [34]; Salvador <i>et al.</i> [38]. Ahmad & Zabri [39]. |

**Interaction between Variables: Hypotheses**

***Exploitation of Capacity and Exploration of Capability and Strategy Ambidexterity***

Javier *et al.* [16], observed that firms tend to concentrate on capacities and capabilities for either exploitation or exploration. Kumar, *et al.* [15] and Salvador *et al.* [38] explained that exploitation-oriented firms aim to achieve better efficiency and improve performance by focusing on, for example, production and routinization. The exploration of new possibilities and the exploitation of established practices involves organizational learning for such combinations [30], and this is called strategy ambidexterity. Moreover, organizational learning allows firms to leverage their current abilities to continuously build (exploitation) and modify unique capabilities (Ash [18]; Suhairi *et al.* [23]), expanding their range of strategic options to improve performance.

Referring to Singh *et al.* [5], Yunita *et al.* [11], and Barton [31], the concept of organizational ambidexterity seeks to manage conflicting demands in a changing task environment and improve performance. In other words, organizations must be efficient in managing current business demands, while demonstrating the flexibility necessary to adapt to new challenges and opportunities in the environment for sustainable business growth [11], [29], and [40].

Nooteboom [41] explained that capacity management and manufacturing planning approach in manufacturing companies have a significant positive impact on firm performance. Manufacturing planning here means that

the management approach is effective to set the desired level of resources to meet the potential market, including investment in facilities, equipment, staffing, and development new product and new markets. Moreover, Wei [24] explained that the capacity management can be grouped in three categories: strategic, tactical and operational planning. Meanwhile, Javier *et al.* [16] explained that capacity and capability approach effectively support on manufacturing flexibility, mean capacity and capability approach able to interpret and integrate various type of flexibility throughout the manufacturing system. Additionally, Yunita *et al.* [11] said that capacity and capability approach are able to cope with changes in its environment.

From a different point of view, Yunita *et al.* [11] found that the technological and design capabilities have important role in strategy ambidexterity. Additionally, Driessen and Den Ende [42] mentioned that excellent embedded technological and design capabilities can attract customers through improved product appearance, effective functions of products, with high quality. Moreover, innovation in an uncertainty environment (could be marketing function such as product, volume, expansion and manufacturing such as machine, material handling, process labors) is needed to meet intense competition and demanding customers, and the management is required to formulate the right and effective strategy through balancing the exploitation and exploration of their capacity and capability [26]. According to Hill [29] in a turbulence environment, firms must optimize organizational capacity and capabilities in the processes of resources integration through exploiting (existing) and exploring (potential markets). However, most organizations choose to concentrate on exploitation or exploration to achieve higher performance [8], [31]. Therefore, the following hypothesis is proposed:

- H<sub>1</sub>: Exploitation of organization capacity has positive impact on strategic ambidexterity at manufacturing companies.
- H<sub>2</sub>: Exploration of organization capability has positive impact on strategic ambidexterity at manufacturing companies.

**Strategic Ambidexterity and Organizational Performance**

Chen *et al.* [8] explain that the strategic ambidexterity approach is an important effort to achieve a firm’s competitive advantage. Cevikarslan [26] assumes that a balance approach between exploration and exploitation is essential for performance, furthermore exploration and exploitation are complementary activities, because resources released through successful exploitation can complement future exploration activities to improve performance [31], [29]. The researcher such as Chen *et al.* [8] and Stei *et al.* [9] found that there is a positive correlation between strategic ambidexterity and firm’s performance. These findings are supported by Mattias [30], whose research results show that strategy ambidexterity has a positive impact on firm’s performance. Moreover, Princes [13] explained the variables of ambidexterity include informal network [43], leadership [7], and the environmental [11]. The performance of a company is very important as a measure of company success. The performance of a manufacturing company can be seen in how high its productivity is, how it minimizes of losses or waste, its safety factors, the quality of services and products also from sales [34], [35]. Therefore, the following hypothesis is proposed:

- H<sub>3</sub>: Strategic ambidexterity has positive impact on organizational performance at manufacturing companies.

**Data Collection**

In data collection, a survey method was used with questionnaires compiled from the literature, as a data collection instrument. The respondents for this research were all staff and supervisors at a manufacturing company who had been actively employed for 3 years or more. Respondents were not determined based on employee percentage, gender, economic status and originality. Respondents who filled out the questionnaire were determined using the convenience sampling method and answered directly in front of the researcher and after being filled in, they were given back to the researcher on the same day.

**Table 2.** Profile of respondents

| No. | Criteria of Respondents      | Explanation                                |
|-----|------------------------------|--|
| 1   | Experience of work           | More than 3 years in manufacturing company |
| 2   | Education background         | Min graduates of D3 and up                 |
| 3   | Position in the company      | Senior staff, managers and plant heads     |
| 4   | Gender                       | Mix Man and women                          |
| 5   | Area of work in factory      | All area in factory                        |
| 6   | Economic status              | No matter (ignore)                         |
| 7   | Originality of the employees | No matter (ignore)                         |

The total number of questionnaires distributed was 200 copies. There were 200 copies of the questionnaire that were completely filled in (100%) but after sorting/filtering only 177 copies (88.5%) were ready for analysis. Respondents used a Likert scale with a range of 1-5 to rate their response to statements. Number 1 represented strongly disagree, and number 5 represented strongly agree. This research used the SEM Lisrel 9.2 program to analyze the data collected.

## Results and Discussions

Before we analyzed by SEM, we first analyzed the data with SPSS, and the results showed that the Reliability Construct (RC) score was 0.95 and above; and the Variance Extracted (VE) score was 0.5 and above. The validity test results are shown in Table 3 – Table 6.

**Table 3.** Exploitation of the capacity of the firm

| No | Item                  | Significant | Note  |
|----|-----------------------|-------------|-------|
| 1  | Question 1 (Exploit1) | 0.789       | Valid |
| 2  | Question 2 (Exploit2) | 0.720       | Valid |
| 3  | Question 3 (Exploit3) | 0.711       | Valid |
| 4  | Question 4 (Exploit4) | 0.779       | Valid |
| 5  | Question 5 (Exploit5) | 0.776       | Valid |

**Table 4.** Exploration of the capacity of the firm

| No | Item                 | Significant | Note  |
|----|----------------------|-------------|-------|
| 1  | Question 1 (Explor1) | 0.796       | Valid |
| 2  | Question 2 (Explor2) | 0.805       | Valid |
| 3  | Question 3 (Explor3) | 0.820       | Valid |
| 4  | Question 4 (Explor4) | 0.822       | Valid |
| 5  | Question 5 (Explor5) | 0.797       | Valid |
| 6  | Question 6 (Explor6) | 0.761       | Valid |
| 7  | Question 7 (Explor7) | 0.783       | Valid |

**Table 5.** Strategy ambidexterity

| No | Item             | Significant | Note  |
|----|------------------|-------------|-------|
| 1  | Question 1 (SA1) | 0.787       | Valid |
| 2  | Question 2 (SA2) | 0.839       | Valid |
| 3  | Question 3 (SA3) | 0.811       | Valid |
| 4  | Question 4 (SA4) | 0.859       | Valid |
| 5  | Question 5 (SA5) | 0.821       | Valid |

**Table 6.** Organizational performance

| No | Item                  | Significant | Note  |
|----|-----------------------|-------------|-------|
| 1  | Question 1 (Perform1) | 0.708       | Valid |
| 2  | Question 2 (Perform2) | 0.698       | Valid |
| 3  | Question 3 (Perform3) | 0.788       | Valid |
| 4  | Question 4 (Perform4) | 0.792       | Valid |
| 5  | Question 5 (Perform5) | 0.844       | Valid |
| 6  | Question 6 (Perform6) | 0.858       | Valid |
| 7  | Question 7 (Perform7) | 0.805       | Valid |

Based on the results, it means that the overall reliability test, validity test and Variance Extracted of the structural variable model meet statistical requirements.

The results of the SEM program analysis on Lisrel 9.2 for the Goodness of Fit (GOF) index analysis also support the proposed hypothesis test, meaning that all GOF index have a good of fit status. The absolute fit measure shows a Root Mean Square Error of Approximation (RMSEA) score of 0.00035 (< 0.05), and Goodness of Fit Index (GFI) as 0,82. This indicates a good level of model fit. The other hand, for the additional measure of suitability, all index state score of 0.95 and above, meaning there is a good level of agreement between the model and the data. In general, the overall model has a good level of fit. A summary of the research and hypothesis testing is presented in Table 7.



**Table 7.** Summary of analyses hypotheses results

| Hypothesis     | Structure Path             | Standardized Coefficient | t-value ( $\geq 1.96$ ) | Description | Conclusion  |
|----------------|----------------------------|--------------------------|-------------------------|-------------|-------------|
| H <sub>1</sub> | Exploit_CC →<br>Strat_Ambi | 0.36                     | 2.79                    | Correlated  | Significant |
| H <sub>2</sub> | Explore_CC →<br>Strat_Ambi | 0.51                     | 3.89                    | Correlated  | Significant |
| H <sub>3</sub> | Strat_Ambi →<br>FPerform   | 0.84                     | 7.06                    | Correlated  | Significant |

## Findings Discussion

Based on the results, the findings show that H<sub>1</sub>, exploitation of the firm's capacity, has a positive and significant effect on strategy ambidexterity of the manufacturing company, with t-value is + 2.79 ( $> 1.96$ ) and standard coefficient 0.36. This means mean that H<sub>1</sub> is accepted. The results of H<sub>2</sub> show even stronger that firm capability exploration has a positive and significant effect on the strategy ambidexterity, with a t-value of + 3.89 ( $> 1.96$ ) and a standardized coefficient of 0.51. This means that H<sub>2</sub> is accepted.

Furthermore, the results of H<sub>3</sub> show that firm's ambidexterity strategy has a positive and significant effect on firm performance in manufacturing companies, because the t-value is + 7.06 ( $> 1.96$ ) and the standard coefficient is 0.084. This means that H<sub>3</sub> is accepted. These results prove the study of Chen *et al* [8], Princes [13], Mathias [30], and Hsu *et al.* [40], which stated that strategy ambidexterity through exploitation and exploration of firm resources can improve firm performance effectively.

In general, it can be concluded that the three hypotheses proposed (H<sub>1</sub>, H<sub>2</sub>, and H<sub>3</sub>) have a positive and significant influence on firm performance indirectly and on the ambidexterity strategy as an intervening variable. It means that the company is exploiting its capacity (H<sub>1</sub>) through the best practices of the leader and employee's abilities; maximizing the technology adopted; integration of instruction and systems with organization's structure clearly; exploit the employees' competencies. In addition, the company is also exploring of their capacity and capability of the firm (H<sub>2</sub>), through offering innovative product, improving product design, expanding to new market, supported by market-oriented products, and visioner leaders. In other words, by balancing both exploitation and exploration of capacity and capability of the company are able to create competitive advantage through applying strategy ambidexterity. This research findings are supported by the earlier research that have been done by Chen *et al.* [8], Yunita *et al.* [11], Princes [13], Asif [27], Hill [29], Barton [31], and Chen [43].

Furthermore, the strategy ambidexterity has been applied well in the company. It has improved the efficiencies and effectivity of the manufacturing operations, identified new opportunities, improved the quality of products, also innovation by adopted the high technology machine and latest method which directly enhance the firm's performance. The overall strategy by applying ambidextrous management is very effective in influencing the performance of the company. These findings also shows that high performance is reflected by high productivity, minimum losses/waste, high safety, high quality of products, good services, and increasing sales. These dimensions of the findings are supporting the earlier research had been done by Mathias [30]; Salvador *et al.* [38]; Ahmad and Zabri [39]; Hsu *et al.* [40]; Driessen and den Ende [42]; Chen [43]; Kombo *et al.* [44]).

## Conclusions

Based on the findings and the discussion above, it can be concluded that in dynamic environment, tighter competition, and effect on open market, require the manufacturing company, especially for ASEAN countries, to optimize and balancing their resources by exploiting and exploring their capacity and capability properly, to create competitive advantage, with consistent strategic ambidexterity to improve the firm's performance. In other words, exploitation and exploration of the capacity and capability of the firms are very effective approaches to increase the performance of manufacturing company which strategic ambidexterity as intervening variable. Through the exploitation of the capacity and capability, management could optimize all the company's assets, and significantly improve the products cost efficiently. This means, this approach is very effective and efficient in improving the process and service quality, as well as in better understanding the market needs and changes in manufacturing firm's business. Theoretically, this is supported by earlier research, which proved that strategic ambidexterity through exploitation and exploration of capacity and capability of the company is effective in improving competitive advantage of manufacturing firms.

The theoretical contribution of this study is that the ambidexterity strategy could be linked to a dynamic based capability-based view, through exploiting and exploring the capability and capacity of firms, to achieve superior performance in manufacturing companies.

Strategic ambidexterity refers to an organization's ability to balance exploitation (optimizing existing resources and capabilities) and exploration (innovating and seeking new opportunities). In the manufacturing sector, this capability is particularly critical due to the need for continuous improvement in operational efficiency (exploitation) while simultaneously adapting to technological advancements and market changes (exploration).

The practical contribution of strategic ambidexterity implementation in our study is very significant in enhancing the operational efficiency and innovation capacity (such as improving processes, reducing costs and innovating new products, adopting emerging technologies); improvements in organizational resilience and adaptability (adapt to external changes such as technological disruptions on shifts in market demand); enhanced innovation performance and sustaining a competitive advantage to achieve superior performance.

The limitation of this research is that the sample and respondents were taken from one company only, which produces specific product categories in manufacturing (such as tires for passenger car, trucks, motorcycles), and is a cross-sectional study; therefore, the results cannot be generalized to other types of products with different types of technology sophistication (tires technology for car, bicycle and for aircraft).

Our study suggests that future research should explore other geographical areas in the city, or even other cities, with similar manufacturing technologies. Indeed, manufacturing industry is still very important in Indonesia as a developing country, contribute to employment generation and economic growth.

## References

- [1] M. Kawai, M. Thuzar, and B. Hayton, "ASEAN's regional role and relations with Japan the challenges of deeper integration", 2016 [Online]. Available: <https://www.chathamhouse.org/sites/default/files/publications/research/2016-02-18-asean-regional-role-kawai-thuzar-hayton.pdf>
- [2] T. R. Valentina and R. E. Putera, "Asean Economy Community (AEC) Indonesian politic of trade in contending with the simple market based production," *Res World J. Arts, Sci. Commer.*, vol. 7, no. 1(1), pp. 82–87, 2016, doi: 10.18843/rwjasc/v7i1(1)/09.
- [3] Y. W. Seo and Y. H. Lee, "Effects of internal and external factors on business performance of start-ups in South Korea: The engine of new market dynamics," *International Journal of Engineering Business Management*, 2019, <https://doi.org/10.1177/1847979018824231>.
- [4] M. R. Ejaz, "Smart manufacturing as a management strategy to achieve sustainable competitiveness," *Journal of the Knowledge Economy*, vol 15, pp. 682–705, 2024, <https://doi.org/10.1007/s13132-023-01097-z>.
- [5] S. S. Dev, S. Singh and A. Gill, "A research on organizational capability and their strategic impact on manufacturing industry," *Asian Review of Mechanical Engineering*, ISSN: 2249-6289 vol. 7, no. 2, pp. 70-75, 2019, doi:10.51983/arme-2018.7.2.2445.
- [6] A. Sibghatullah, M. Raza, "The impact of strategic leadership on competitive advantage: The mediating role of ambidexterity and information system: evidence from islamic banks in Jordan," *International Journal of Informatics and Information System*, ISSN 2579-7069, vol. 3, no. 2, pp. 67-80, 2020, <https://doi.org/10.47738/ijiis.v3i2.67>.
- [7] E. Princes, "Ambidextrous leadership in manufacture industry in Indonesia," *Journal Management and Marketing, Rev.*, vol. 4, no. 3, pp. 218–227, 2019, [https://doi.org/10.35609/jmmr.2019.4.3\(7\)](https://doi.org/10.35609/jmmr.2019.4.3(7)).
- [8] C. J. Chen, Y. F., Huang, Y. X. Song, "Strategic ambidexterity and platform firm performance," *IEEE Transaction on Engineering Management*, vol. 71, pp. 11407-11420, 2024, DOI: 10.1109/TEM.2024.3416406.
- [9] G. Stei, A. Rossmann, and L. Szász, "Leveraging organizational knowledge to develop agility and improve performance: the role of ambidexterity," *International Journal of Operations & Production Management*, vol. 44, no. 8, pp. 1446-1466, 2024, <https://doi.org/10.1108/IJOPM-04-2023-0274>.
- [10] E. Baia, J.J. Ferreira, and R. Rodrigues, "Value and rareness of resources and capabilities as sources of competitive advantage and superior performance," *Knowledge Management Research & Practice*, vol. 18, no. 3, pp. 249–262, 2019, <https://doi.org/10.1080/14778238.2019.1599308>.
- [11] T. Yunita, Sasmoko, A. Bandur, and F. Alamsjah, "Organizational ambidexterity: The role of technological capacity and dynamic capabilities in the face of environmental dynamism." *Journal Heliyon*, vol. 9, no. 4, 2023, e14817. <https://doi.org/10.1016/j.heliyon.2023.e14817>.
- [12] P. Wójcik, "Exploring links between dynamic capabilities perspective and resource-based view: A literature

- overview," *International Journal of Management and Economics*, vol. 45, no. 1, pp. 83–107, 2015, <http://www.sgh.waw.pl/ijme/>, doi:10.1515/ijme-2015-0017.
- [13] E. Princes, "Integrating ambidexterity into the modern manufacturing era of industry 4.0," *International Journal of Supply Chain Management*, vol. 9, no. 4, pp. 58-64, 2020, <https://doi.org/10.59160/ijscm.v9i4.4263>.
- [14] M. R. Ejaz, "Smart manufacturing as a management strategy to achieve sustainable competitiveness," *Journal of the Knowledge Economy*, vol. 15, pp. 682–705, 2022, <https://doi.org/10.1007/s13132-023-01097-z>.
- [15] S. Kumar, A. Goyal, and A. Singhal, "Manufacturing flexibility and its effect on system performance," *Jordan Journal of Mechanical and Industrial Engineering*, vol. 11, no. 2, pp. 105-112, 2017, Online : <https://jjmie.hu.edu.jo/vol-11-2/JJMIE-02-16-01.pdf>.
- [16] T. T. Javier, G. G. Leopoldo, and R. M. Antonia, "The relationship between exploration and exploitation strategies, manufacturing flexibility and organizational learning: An empirical comparison between Non-ISO and ISO certified firms," *European Journal of Operational Research*, vol. 232, no. 1, pp.72-86, 2014, <https://doi.org/10.1016/j.ejor.2013.06.040>.
- [17] I. Onyeyirichukwu, P. Chukwunwike, and I. L. Madu, "Organizational learning: A resource based view analysis," *International Journal of Scientific reserch and Management*, ISSN 2321-3418, vol. 12, no. 04, pp. 6079-6087, 2024, DOI:10.18535/ijserm/v12i04.em03.
- [18] M. G. Ash, "How do firms build dynamic capabilities to develop sustainable products? A multiple case study in the manufacturing industry," *Journal of Cleaner Production*, vol. 415, pp. 137887, 2023, <https://doi.org/10.1016/j.jclepro.2023.137887>.
- [19] S. De, R. R. K. Sharma, and B. K. Pandey, "Relationship of manufacturing flexibility with organizational strategy," *Global Journal of Flexible Systems Management*, vol. 20 no. 3, pp. 237–256, 2019, <https://doi.org/10.1007/s40171-019-00212-x>.
- [20] M. U. Garcia, E. C. Cortés, B. M. Lajara, F. G. Lillo and P. Z. Sáez, "Organizational success," *Employee Relations: The International Journal*, vol. 41 no. 6, pp. 1379-1397, 2019, © Emerald Publishing Limited 0142-5455 DOI 10.1108/ER-11-2017-0261.
- [21] K. Ho'ise, A. Amaral, U. Go'tze, and P. Peca's, "Manufacturing flexibility through industry 4.0 technological concepts—impact and assessment," *Global Journal of Flexible Systems Management (June 2023)*, vol. 24, no. 2, pp. 271–289, 2023, DOI: 10.1007/s40171-023-00339-y.
- [22] G. Baskoro, I. Mariza, I., and I.N. Sutapa, "Innovation to improve critical thinking skills in the generation Z using peeragogy as a learning approach and artificial intelligence (AI) as a tool," *Jurnal Teknik Industri: Jurnal Keilmuan dan Aplikasi Teknik Industri*, vol. 25, no. 2, pp. 121-130, 2023, <https://doi.org/10.9744/jti.25.2.121-130>.
- [23] S. K. Suhairi, M. Margonoa, S. Aisjah, and M. Wahdiyati, "The role of dynamic capabilities and innovation on the competitiveness of the manufacturing firms in Indonesia," *Uncertain Supply Chain Management (Growing Science)*, vol. 12, no. 4, pp. 2349-2356, 2024, DOI: 10.5267/j.uscm.2024.5.032.
- [24] Z. Wei, "Driving competitive advantage: A study of dynamic capability and digital maturity in the electronic manufacturing industry," *International Journal of Science and Business*, ISSN 2520-4750, vol. 39, no. 1, pp. 1-21, 2024, <https://doi.org/10.58970/IJSB.2421>.
- [25] B. Suteerachai, A. Meechaiwong, P. Suksod, and K. Jermisittiparsert, "Developing a framework of an innovative supply chain in thai manufacturing firms: An interaction of social capital theory and knowledge-based view," *International Journal of Supply Chain Management*, vol. 8, no. 6, pp. 234–244, 2019, <https://doi.org/10.59160/ijscm.v8i6.4142>.
- [26] N. Ugur Cevikarslan, "Balancing exploration & exploitation:the comparative effects of structural and temporal separation," *Academy of Management Proceeding*, vol. 2015, no. 1, pp. 17980–17980, 2015, DOI:10.5465/AMBPP.2015.17980abstract.
- [27] M. Asif, "Exploring the role of exploration/ exploitation and strategic leadership in organizational learning," *Strategic leadership The current issue and full text archive of this journal is available on Emerald Insight at: www.emeraldinsight.com/1756-669X.htm*, vol. 11, no. 3, pp. 409-423, 2019, <https://doi.org/10.1108/IJQSS-04-2018-0038>.
- [28] A. C. Moreira, E. C. Navaia, and C. Ribau, "The importance of exploration and exploitation innovation in emerging economies," *Journal of Open Innovation: Technology, Market, and Complexity*, vol. 8, no. 3, pp. 140, 2022, <https://doi.org/10.3390/joitmc8030140>.
- [29] S. Hill, *Organizational Ambidexterity. Management*, Oxford Bibliography, 2024, DOI: 10.1093/OBO/9780199846740-0214.
- [30] B. D. Mathias, "Exploration, exploitation, ambidexterity, and firm performance: A meta-analysis," *Exploration and Exploitation in Early Stage Ventures and SMEs (Technology, Innovation, Entrepreneurship and Competitive Strategy*, Emerald Group Publishing Limited, Leeds, vol. 14, pp. 289-317, 2014, <https://doi.org/10.1108/S1479-067X20140000014009>.

- [31] L. Barton, "Organizational ambidexterity and performance: examining the moderating role of unit differentiation", *In Proceedings Academy of Management Proceeding 2023*, 2023, <https://doi.org/10.5465/AMPROC.2023.19004>.
- [32] M. Uyanik, "Resource bases view in marketing literature", *Journal of Business and Management Studies*, vol. 5, no. 4, pp. 29-39, 2023, <https://doi.org/10.32996/jbms.2023.5.4.4>.
- [33] A. S. Vallina, M. D. M. Luzon, and A. F. Franco, "The individual side of ambidexterity: Do inspirational leaders and organizational learning resolve the exploitation-exploration dilemma?," *Employee Relations: The International Journal*, vol. 41, no. 3, pp. 592-613, 2019, <https://doi.org/10.1108/ER-02-2018-0050>.
- [34] L. Cania, "The impact of strategic human resource management on organizational performance," *Economia, Seria Management*, vol. 17, no. 2, pp. 373–383, 2014, [Online]. Available: <https://www.management.ase.ro/reveconomia/2014-2/14.pdf>.
- [35] B. Gupta, and R. Agarwal, "Strategic performance measurement system and its impact on organizational effectiveness: A study of United Arab Emirates based organizations," *European Journal of Business and Management Research*, vol. 7, no. 3, pp. 266–276, 2022, <https://doi.org/10.24018/ejbmr.2022.7.3.1452>.
- [36] M. Yurdakul and Y. Tansel, "A performance measurement model for manufacturing companies to determine their strengths and weaknesses in critical activities," *International Symposium on the Analytic Hierarchy Process*. London UK, 2016, [Online]. Available: [http://www.isahp.org/uploads/isahp16\\_proceeding\\_1139097.pdf](http://www.isahp.org/uploads/isahp16_proceeding_1139097.pdf)
- [37] A. Uwamahoro, N. I. Shale, and E. Wachiuri, "Performance measurement integration and performance of manufacturing firms in Rwanda," *International Journal of Science and humanities Research*, vol 2, no 1, pp. 221-236, 2024, <https://doi.org/10.61108/ijsshr.v2i1.84>
- [38] F. Salvador, A. Chandrasekaran, and T. Sohail, "Product configuration, ambidexterity and firm performance in the context of industrial equipment manufacturing", *Journal of Operations Management*, vol. 32, no. 4, pp. 138–153, 2014, doi: 10.1016/j.jom.2014.02.001.
- [39] K. Ahmad and S. M. Zabri, "The effect of non-financial performance measurement system on firm performance," *International Journal of Econ.omics and Financial Issues*, vol 6, no. 6S, pp. 50-54, 2016, [Online], Available : <https://www.econjournals.com/index.php/ijefi/article/view/3149>.
- [40] C.-W. Hsu, Y.-C. Lien, and H. Chen, "International ambidexterity and firm performance in small emerging economies," *Journal of World Business*, vol. 48, no. 1, pp. 58–67, 2014, doi: 10.1016/j.jwb.2012.06.007.
- [41] B. Nootboom, *Dynamic capabilities. history and an extension*, Cambridge University Press, ISBN: 9781009014182, 22 July 2022.
- [42] F. Blindenbach-Driessen and J. van den Ende, "The locus of innovation: The effect of a separate innovation unit on exploration, exploitation, and ambidexterity in manufacturing and service firms, " *Journal of Product Innovation Management*, vol. 31, no. 5, pp. 1089–1105, 2014, doi: 10.1111/jpim.12146.
- [43] Y. Chen, "Dynamic ambidexterity: How innovators manage exploration and exploitation". *Business Horizons*, vol. 60, no. 3, pp. 385–394, 2017. doi: 10.1016/j.bushor.2017.01.001.
- [44] H. K. Kombo, P. K'Obonyo, and M. Ogutu, "Knowledge strategy and performance of manufacturing firms in Kenya," *Journal of Business and Economic Policy*, vol. 2, no. 3, pp. 199–207, 2015, [Online]. Available: [https://www.jbepnet.com/journals/Vol\\_2\\_No\\_3\\_September\\_2015/20.pdf](https://www.jbepnet.com/journals/Vol_2_No_3_September_2015/20.pdf)