Does strategic agility and innovation capability have an impact on firm performance? A study on the Indonesian motorcycle industry

Hera Purwanto
Harya K. Wiralaga
Ari Saptono

ABSTRACT

Agility and innovation are two of the most important capabilities that organizations have to deal with in disruptive environments. This research aims to examine the effect of strategic agility and innovation capability on firm performance in the Indonesian motorcycle industry. The research was conducted on 208 companies comprising both OEM (original equipment manufacturer) and tier 1 component suppliers in the supply chain of the Indonesian motorcycle industry. The validity was tested using the content, construct and convergent validity tests, the construct reliability was tested using the one-shot measure reliability test, and the hypothesis testing was carried out using structural equation modeling. The results show that innovation capability has a significant direct effect on strategic agility and firm performance, but in contrast to previous research findings, strategic agility does not have a significant direct effect on firm performance. In addition, strategic agility does not mediate the relationship between innovation capability and firm performance. These findings provide practical guidelines for the motorcycle industry in Indonesia to focus on developing innovation capabilities, particularly process innovation, which is related to the industry's ability to manufacture products at a lower cost and become a pioneer of the latest technology in its field. In the current conditions, companies are advised to focus more on other types of agility, such as operational or supply chain agility rather than strategic agility.

Contribution/Originality: This is the first study that examines the effect of innovation capability and strategic agility on firm performance in industries that change their product/service offerings less frequently.

1. INTRODUCTION

Similar to other industrial sectors, the motorcycle industry, especially in Indonesia, has not been spared from shocks due to disruptions in the industrial environment. Domestic motorcycle sales reached their peak in 2011 with sales of over eight million units per year. Sales then began to decline, with only 3.7 million motorcycles sold in 2020 (AISI, 2021). The biggest environmental challenges faced by the motorcycle industry include electric vehicles (Burns, 2020), ridesharing services such as Gojek and Grab (Techedge, 2020), intelligent, interrelated, and autonomous vehicles (Iyer, 2019), awareness of the need for environmentally friendly vehicles (Burns, 2020), and radical changes in customer behavior (Iyer, 2019). In addition to these, new problems have emerged since the Covid-19 pandemic, for example, disruption to component delivery, and a shortage of ships, among others (IHSmarkit, 2020).
In his 30 years of research, Dave Ulrich has identified the capabilities that organizations need to succeed, and found that agility is the main capability necessary to deal with disruptive environments (Ulrich, 2018). In previous studies, most researchers also found that agility is the most important factor for dealing with organizational change due to environmental disruption and gaining a competitive advantage (Antonacopoulou, Moldjord, Steiro, & Stokkeland, 2019; Baran & Woznyj, 2021; Kaivo-oja & Lauraeus, 2018; Schoenthaler, 2019).

The next variable chosen in this study is innovation capability because it is the most important variable that allows organizations to respond correctly to disruption in the work environment and has a direct impact on the competitive edge and performance of a company (Al-Hawary & Batayneh, 2015; Farhana & Swietlicki, 2020; Maldonado-Guzmán, Garza-Reyes, Pinzón-Castro, & Kumar, 2018; Migdadi, 2022). Meanwhile, Phankhong, Abu Bakar, and Latief Poespowidjojo (2017) underlined that innovation is a company’s ability to elevate performance through a focus on continuous development activities and increase the productivity of existing components within the organization.

The aim of the study is to investigate the impact of strategic agility and innovation capability on company performance in the motorcycle industry in Indonesia. Due to the small amount of empirical research on the impact of strategic agility and innovation capability on company performance both directly and indirectly, and how these two variables interact within the scope of the motorcycle industry, a prototype was created to better understand the factors that affect firm performance. Many researchers have examined the performance of micro, small and medium industries (Benzidia & Makoui, 2020; Ogunleye, Adeyemo, Adesola, & Yahaya, 2021), the performance of telecommunication providers (Clauss, Abebe, Tangpong, & Hock, 2019; Kurniawan, Budiastuti, Hamsal, & Kosasih, 2020), mining supply chain performance (Naway & Rahmat, 2019), logistics and transportation performance (Ju, Ferreira, & Wang, 2020; Umam & Sommanawat, 2019), general manufacture performance (AlTaweel & Al-Hawary, 2021; Arokodare, 2021; García-Alcaraz et al., 2020), and four-wheeled automotive performance (Aisyah, Purba, Jaqin, Amelia, & Adiyatna, 2021; Dubey, Gunasekaran, & Childe, 2018), but the only study that discusses the performance of the motorcycle industry is by Vasuvanich, Somjai, Rattamanee, and Jermsittiparsert (2020).

Previous research on the effect of strategic agility on organizational performance has been conducted in industries that can quickly change their product and service offerings to customers, such as banks, technology organizations, fashion, and retail (Clauss et al., 2019; Haider & Kayani, 2021; Kale, Aknar, & Başar, 2019; Kurniawan et al., 2020), but the effect of strategic agility on organizations that do not change their product and service offerings as quickly as the automotive industry in general, and the motorcycle industry in particular, is not found in previous references and becomes the novelty for this study. To the best of our knowledge, the variables of strategic agility, innovation capability and company performance in the scope of empirical research have not been discussed simultaneously in one research paper. Therefore, the aim of this research is to build a more balanced and empirical picture of innovation capability and strategic agility activities from the viewpoint of Indonesia’s motorcycle industry.

2. LITERATURE REVIEW

2.1. Theoretical Framework

Strategic management undergoes periodical changes in response to the internal needs of the organization as well as to address the challenges of the external environment. To achieve a competitive advantage, a set of management decisions and actions is needed that can help determine the long-term performance of an organization, including environmental scanning, strategic implementation, evaluation and control (David, David, & David, 2017; Wheelen & Hunger, 2018; Witcher, 2020). According to the resource-based theory, an organization can obtain superior performance if it has competitive advantages that arise from implementing value creation strategies through resources and capabilities. These include value, rareness, inimitability, and non-substitutability that cannot be copied and implemented by current and potential competitors (Barney, 1991; Barney, 1986, 2001; Mills, Platts, &
Bourne, 2003; Peteraf & Bergen, 2003). Capabilities in the context of the resourced-based view are identified as ordinary capabilities (Shoemaker, Heaton, & Teece, 2018; Teece, Peteraf, & Leih, 2016; Teece, 2012; Wilden, Gudergan, Nielsen, & Lings, 2013).

In this paper, innovation capability is viewed from the perspective of resource-based theory, so innovation capability is included in the ordinary capability category (Camisón & Villar-López, 2014; Pavlou & El Sawy, 2011). The key features of ordinary capability are the ability to create value directly through new products and services and being able to remain competitive by adjusting market activities (Ambrosini, Bowman, & Collier, 2009).

In a dynamic environment, it is not enough for a company to have ordinary capability only (Nieves & Haller, 2014); dynamic capabilities are proposed as an enhancement of the resource-based view to provide information on how to maintain an organization's competitive advantage in highly dynamic and changing markets and disrupted organizational environments (Edstein, Goellner, Blome, & Henke, 2015; Teece, 2012). Dynamic capabilities enable organizations to deal with rapid environmental changes by integrating, configuring and deploying other resources to better detect and grasp opportunities, evade threats, and preserve their competitive advantage (Teece, 2014; Yu, Chavez, Jacobs, & Feng, 2018).

In volatile environmental conditions, where globalization influences customer habits and demands are affected by endless changes, one of the essential factors leading to success for companies is strategic agility (Morton, Stacey, & Mohn, 2018; Vaillant & Lafuente, 2019). In addition to the direct impact within the dynamic capabilities framework, strategic agility enables the reorganization and transformation of existing static resources, knowledge, skills and capabilities into innovative products and process (Makkonen, Pohjola, Ollikonen, & Koponen, 2014; Pavlou & El Sawy, 2011), and function become a mediator (Wang, Senaratne, & Rafiq, 2015) between ordinary capability and company performance. This study is based on the opinions of Cepeda and Vera (2007) and Fawcett, Wallin, Allred, Fawcett, and Magnan (2011), which state that an increase in organizational performance can be obtained from the joint use of ordinary capabilities and dynamic capabilities, thus both types of capabilities are used.

2.2. Hypotheses

2.2.1. The Effect of Innovation Capability on Firm Performance

All empirical studies on the topic of the influence of innovation capacity on organizational performance obtained positive results, including Khan and Kumar (2019), who found that there are three grades of technological capability needed to improve the performance of the Indian automotive industry, namely elementary grade (operational capability), medium grade (investment capability), and advanced grade (innovation capability). Mir, Casadesús, and Petnji (2016) studied the automotive industry in Spain and found that innovation capability directly and positively influences innovation performance and ultimately influences organizational performance. Masoomzadeh, Zakaria, Masrom, Streimikiene, and Tavakoli (2019) concluded that, apart from the direct impact on organizational performance, the mediating impact of innovation capability appears to be equally important. From the description above, we can conclude that innovation capability has a positive effect on firm performance. Therefore, we hypothesize that:

Hypothesis 1 (H1): Innovation capability has a positive and significant influence on firm performance.

2.2.2. The Effect of Innovation Capability on Strategic Agility

Olaleye, Anifowose, Efuntade, and Arije (2021) stated that innovation capability has a positive and significant influence on strategic agility, while strategic agility mediates the relationship between innovation ability and corporate resilience. However, Altaweel and Al-Hawary (2021) stated that strategic agility has a positive and significant impact on innovation capability. This happens because strategic agility provides the capability for organizations to be able to recognize opportunities and threats that occur in their environment and respond and adapt quickly using their resources effectively and efficiently. By looking at innovation capability as an ordinary
capability and strategic agility as a dynamic capability, where one of the roles of dynamic capability is to reconfigure ordinary capability, it can be concluded from the two studies mentioned above that innovation capability has a positive and significant influence on strategic agility. Teece et al. (2016) suggested that dynamic capability is a framework that streamlines agility through (a) sensing, (b) seizing and (c) shifting. Most researchers believe that certain dynamic capabilities are composite capabilities that allow an organization to achieve strategic agility (Gurkov, Goldberg, & Saidov, 2017; Hock, Clauss, & Schulz, 2016; Ivory & Brooks, 2018), so the insight can be drawn that innovation capability can influence strategic agility through the seizing mechanism. Therefore, we can formulate the second hypothesis as follows:

**Hypothesis 2 (H2): Innovation capability has a positive and significant influence on strategic agility.**

### 2.2.3. The Effect of Strategic Agility on Firm Performance

Previous studies on strategic agility were generally carried out in an industrial context on companies such as banks, technology organizations, fashion and retail that could quickly change their product and service offerings to customers, with most of the findings stating that the use of strategic agility by companies can convincingly increase excellence, organizational competitiveness and, in turn, organizational performance (Clauss et al., 2019; Haider & Kayani, 2021; Kale et al., 2019; Kurniawan et al., 2020). The effect of strategic agility on organizations that cannot quickly change their product offerings or services has not yet attracted the attention of researchers. Similar to organizations in other industries, the motorcycle industry is presently operating in a disruptive business environment. Electric motorbikes, changes in customer behavior, ridesharing, and smart and connected vehicles will likely disrupt the industry. To succeed, the motorcycle industry's supply chain requires strategic agility, as it can significantly affect business operations and competitiveness. Strategic agility is valued more when uncertainty and disruption are regular occurrences in an organization's work environment (Schilke, 2014). Therefore, strategic agility can be formulated as an important capability for the motorcycle industry supply chain to manage rapid changes that have the potential to disrupt the organization’s performance and future. Therefore, we propose that:

**Hypothesis 3 (H3): Strategic agility has a positive and significant influence on firm performance.**

### 2.2.4. The Role of Strategic Agility Mediates the Effect of Innovation Capability on Firm Performance

When organizational excellence rests on the ability to create market opportunities through the provision of new products or services (Khoshnood & Nematizadeh, 2017), dynamic capabilities related to adaptation, orchestration and innovation processes in identifying new products or services are also related to the potential to reach new markets (Teece, 2014). It is hoped that by becoming an intervening variable, strategic agility will enable organizations to adapt to changing business environments and create value through updating and reconfiguring their innovation capability and be more active in offering new products or services according to market needs (Patrício, Pereira, & Santos, 2019). So rather than solely focusing on solving current problems, it will result in a competitive advantage and improve organizational performance. In their research of 224 senior managers in finance, commercial, and manufacturing companies, AlTaweel and Al-Hawary (2021) found that innovation capability has a mediating role in enhancing the effect of strategic agility on firm performance. Zhou, Zhou, Feng, and Jiang (2019) found that innovation capability plays a mediating role in increasing the effect of marketing agility on financial performance. From these two studies, it is innovation capability that mediates strategic agility, but given the indirect role of the two variables on firm performance, the mediation roles can be exchanged. Therefore, based on the above considerations, the next hypothesis is proposed as follows:

**Hypothesis 4 (H4): Strategic agility mediates the effect of innovation capability on firm performance.**

By considering the theoretical framework and the above hypotheses, the hypothetical model shown in **Figure 1** was created.
3. METHODOLOGY

3.1. Population and Sample

With little empirical research examining the performance of the motorcycle industry, this study will provide a new understanding. The data was taken from the top three motorcycle manufacturing companies in Indonesia (Honda, Yamaha and Suzuki) and tier 1 suppliers, which manufacture around 90% of motorcycles in Indonesia (AISI, 2021). The respondents are managers, senior managers, general managers, and directors in these companies. Data collection was carried out from May 13, 2022, to July 24, 2022, using a questionnaire on Google Forms, and the link to the questionnaire was sent via email or WhatsApp. Data was gathered from 68 OEMs and 140 suppliers that fully completed the questionnaire. The sample was selected using the probability sampling method with a proportional random sampling technique (Sekaran & Bougie, 2020). The sample selection considered the proportion of the value of motorcycle components and overall risk management, so it is hoped that the generalization process can be carried out based on the data obtained from the target population.

3.2. Research Instruments

Questionnaires are the most widely used tool in social and managerial studies, specifically to collect data from individual respondents (Saunders, Lewis, & Thornhill, 2019). The first part of the questionnaire was created to collect information on the respondent's profile (position, how long they've worked in a managerial position, type of work, type of company, number of OEM companies that are customers, number of employees, and company experience in the motorcycle industry). The second part measures the variables of the research. Different to most other studies that used a 5-point or 7-point Likert scale, the questionnaire in this study uses a 6-point Likert scale to avoid the tendency of respondents to give a score in the middle (Edwards, 1957).

Innovation capability variables are measured using four dimensions (product innovation, process innovation, market innovation, and organizational innovation) and 16 indicators based on research instruments from Zhou et al. (2019); Migdadi (2022); Najafi-Tavani, Najafi-Tavani, Naudé, Oghazi, and Zeynaloo (2018) and Camisón and Villar-López (2014). Most of the previous research only used two dimensions—product innovation and process innovation (AlTaweel & Al-Hawary, 2021; Camisón & Villar-López, 2014; Rotjanakorn, Sadangharn, & Na-Nan, 2020). This study added market innovation and organizational innovation because they are closely related to strategic agility, which is the ability of organizations to proactively perceive change, have a flexible approach to change, trust each other in the face of new developments, and continuously adjust the strategic direction of the organization and develop innovative ways to create value. Strategic agility variables are measured using three dimensions (strategic sensitivity, resource fluidity, and leadership unity) proposed by Doz and Kosonen (2010) and 11 indicators based on research instruments from Hock et al. (2016) and Clauss et al. (2019). Finally, firm performance variables are measured using three dimensions (operational performance, market performance, and financial performance) and six indicators based on research instruments from Migdadi (2022); Clauss et al. (2019) and García-Alcaraz et al. (2020). These three dimensions were used because of the need to understand which type of performance is most influenced by the variables studied. This is what distinguishes this paper from previous studies, as most do not specifically...
distinguish between the types of organizational performance (Dubey et al., 2018; Masoomzadeh et al., 2019; Torres, Sidorova, & Jones, 2018) or only focus on one type, for example, operational performance (Delic & Eyers, 2020; Geyi, Yusuf, Menhat, Abubakar, & Ogbuke, 2020) or financial performance (Camisón & Villar-López, 2014; Hwang & Kim, 2019).

Before distributing, the research questionnaire went through several tests. In the first stage, a literature study was carried out on similar research to select items for the questionnaire’s construct. Then each item was tested and the results were processed using SPSS 25. Construct validity was measured by comparing the \( r_{count} \) value with \( r_{table} \); if the \( r_{count} \) value is greater than \( r_{table} \), then the difference is considered significant and the instrument is declared valid (Krabbe, 2017). The \( r_{count} \) value of the 37 research indicators is between 0.523 and 0.872, which is greater than \( r_{table} 0.325 \), so all research indicators are declared valid. Reliability testing was carried out using Cronbach’s alpha test. A construct is declared reliable if it has a Cronbach’s alpha value > 0.60 (Ghozali, 2017). From the test results, the Cronbach’s alpha value for all variables/constructs ranged from 0.881 to 0.968, which is more than 0.60, so the instrument was declared reliable and usable.

3.3 Data Analysis Techniques and Hypothesis Testing

Partial least squares structural equation modeling (PLS-SEM) with SmartPLS 3 software was used to perform an inferential analysis to test the research models and hypotheses. There are three methods for processing statistical data used by researchers in this study: an exploratory factor analysis (EFA) to ensure that the construction of the study is simple, a confirmatory factor analysis (CFA) to ensure that the quality of the model is a good fit for the indicators (Hair, Hollingsworth, Randolph, & Chong, 2017), and SEM to test the hypotheses. The mediating effect follows the approach taken by Baron and Kenny (1986).

4. RESULTS AND DISCUSSION

4.1. Profile of Research Respondents

The profiles of respondents in this study were grouped into seven categories: position, experience in managerial positions, field of work, type of company, number of OEM companies that became customers, number of employees, and the length of experience of the company in the motorcycle industry (see Table 1).

<table>
<thead>
<tr>
<th>Table 1. Profile of research respondents.</th>
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<tbody>
<tr>
<td><strong>Respondent identity variables</strong></td>
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<tr>
<td>1. Respondent's position in the company</td>
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<td>2. The length of time the respondent held a managerial position in the company</td>
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<td>3. Field of work of respondents in the company</td>
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4.2 Measurement Model Estimation

Measurement of the estimation model was carried out using a two-level confirmatory factor analysis (CFA) approach. This approach aims to test the validity and reliability of each research construct. The first order CFA shows the relationship between the indicators and their dimensions, while the second order CFA shows the relationship between the dimensions and the research variables. From the first CFA sequence it was found that the IC-10 and STA-1 indicators had a loading value of less than 0.7 (Hair, Hult, Ringle, & Sarstedt, 2021), so these were excluded from the study. Then a second order CFA was performed to estimate the validity and reliability of the 18 dimensions. The validity in this research was checked based on convergent validity and discriminant validity, while the reliability was determined based on the value of composite reliability and Cronbach’s alpha. The validity and reliability test results are presented in Table 2. The results show that the standardized loading factor (SFL) of all constructs is greater than 0.7, the average variance extracted (AVE) values are greater than 0.5, the composite reliability (CR) values are greater than 0.7, and the Cronbach’s alpha (α) values are greater than 0.7. Therefore, the construct is considered valid and reliable.

Table 2. Results of CFA research variables

<table>
<thead>
<tr>
<th>Construct</th>
<th>SFL ≥ 0.7</th>
<th>AVE ≥ 0.5</th>
<th>CR ≥ 0.7</th>
<th>α ≥ 0.7</th>
<th>Note</th>
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</thead>
<tbody>
<tr>
<td>Variable: Innovation capability</td>
<td></td>
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<tr>
<td>o Dimension: product innovation capability</td>
<td>0.844</td>
<td>0.613</td>
<td>0.894</td>
<td>0.936</td>
<td>Good reliability</td>
</tr>
<tr>
<td>o Dimension: process innovation capability</td>
<td>0.899</td>
<td></td>
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<tr>
<td>o Dimension: market innovation capability</td>
<td>0.873</td>
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<tr>
<td>o Dimension: organizational market capability</td>
<td>0.887</td>
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<tr>
<td>Variable: Strategic agility</td>
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<tr>
<td>o Dimension: strategic sensitivity</td>
<td>0.931</td>
<td>0.846</td>
<td>0.943</td>
<td>0.909</td>
<td>Good reliability</td>
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<tr>
<td>o Dimension: resource fluidity</td>
<td>0.920</td>
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<td>o Dimension: leadership unity</td>
<td>0.906</td>
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<tr>
<td>Variable: Firm performance</td>
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</tr>
<tr>
<td>o Dimension: operational performance</td>
<td>0.937</td>
<td>0.783</td>
<td>0.916</td>
<td>0.802</td>
<td>Good reliability</td>
</tr>
<tr>
<td>o Dimension: market performance</td>
<td>0.883</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>o Dimension: financial performance</td>
<td>0.811</td>
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Note: SFL = Standardized factor loading; CR = Composite reliability; AVE = Average variance extracted; α = Cronbach’s alpha.
4.3. Structural Model Assessment

Structural models are used to predict causal relationships between latent variables or variables that cannot be directly measured. The structural model that describes the causal relationships between latent variables is based on the essence of the theory proposed in Figure 1. The structural model test was carried out using bootstrapping and blindfolding procedures in SmartPLS. The outcomes of the fit model obtained using a p-value < 0.5 are: SRMR = 0.045, d_ULS = 0.339, d_G = 0.373, Chi-square = 416.149, NFI = 0.884, and rms Theta = 0.182. Thus, the results provide irrefutable evidence that the model is fit for use with the research data, as shown in Figure 2.

![Figure 2. SEM estimation results with composite indicators.](image)

4.4. Hypothesis Testing

After the structural model assessment, the next stage is to estimate the relationships between the variables that represent each theoretical hypothesis. The results of the direct and indirect influence checks are presented in Table 3, which show a significant direct effect of innovation capability on firm performance (effect = 28.1%; T-statistic = 2.595; p-value = 0.009). There is also a significant direct effect of innovation capability on strategic agility (influence = 23.8 %; T-statistic = 3.313; p-value = 0.001). Meanwhile, there was no significant direct effect of strategic agility on firm performance (influence = 0.9%; T-statistic = 0.064; p-value = 0.949), and the results of the indirect path significance test for the effect of business intelligence on organizational performance through strategic agility show a positive effect (value = 0.2%) but it is not significant (T-statistic value = 0.062; p-value = 0.950). Therefore, H1 and H2 are accepted, while H3 and H4 are rejected.
4.5. Discussion

This study has revealed some important findings. First, innovation capability has a positive and significant direct impact on firm performance. This influence is mainly related to process innovation having a direct effect on operational performance, which is the dimension of the organizational performance variable that has the highest average score and load factor. The above can also be proven practically by increasing the number of exports from year to year, which can only be achieved through quality and global cost competitiveness (Betì, 2018; Wijaya, 2022).

Second, innovation capability has a positive and significant direct effect on strategic agility. As most researchers have found that some dynamic capabilities are meta capabilities that enable an organization to achieve strategic agility (Gurkov et al., 2017; Hock et al., 2016; Ivory & Brooks, 2018), it can be concluded that innovation capability positively influences strategic agility through the seizing mechanism using the organization innovation dimension as well as through the shifting and transforming mechanism using the product innovation and process innovation dimensions.

Third, in contrast to the results of previous studies, strategic agility does not have a significant direct effect on the performance of firms in the motorcycle industry in Indonesia. This is the case because previous research regarding the effect of strategic agility on firm performance was carried out in industries that can quickly change their product and service offerings to their customers (Clauss et al., 2019; Haider & Kayani, 2021; Kale et al., 2019; Kurniawan et al., 2020).

Meanwhile, the impact of strategic agility on organizations that do not change product or service offerings quickly, such as in the automotive or motorcycle industries, has not been studied until now. This phenomenon is related to the management position of OEM companies who see that decisions related to new offers to customers are dominated more by principal companies than local partner companies (Jakhotiya, 2019). In a research of the Japanese brand automotive industry in Thailand, Korwatanasakul (2023) found that even though local companies achieved acquisitions and technical improvements, the principal companies still monopolized research and development activities for new products and innovations, and the position of local management in making new offers to customers is small. This is why the effect of strategic agility on the performance of the Indonesian motorcycle industry is perceived as insignificant in this study.

Finally, it was found that strategic agility does not play a mediating role in the effect of innovation capability on firm performance due to its insignificant effect on the performance of firms in the motorcycle industry in Indonesia.
5. CONCLUSION

5.1. Theoretical and Practical Implication

From the perspective of the resource-based theory and the dynamic capability theory, the findings of this study contribute theoretically to explaining the influence of innovation capability and strategic agility on firm performance and how strategic agility mediates the relationship between innovation capability and organizational performance.

In terms of practical implications, the research provides guidance for motorcycle companies in Indonesia on how to face competitive challenges in disruptive environmental conditions. These findings provide practical guidance on developing innovation capability, especially process innovation. This is related to how the industry is able to implement manufacturing processes with low production costs and become the pioneer of the latest technology in its field.

Next, by looking at the current conditions where sales of electric motorbikes are still not significant compared to conventional motorbikes, changes in customer behavior in terms of mass transport and ridesharing are still limited to big cities, and smart and connected vehicles are not yet popular. Therefore, to be more competitive, the Indonesian motorcycle industry should not focus on strategic agility, but focus on other types of agility, such as supply chain or operational agility, to overcome temporary and short-term disruptions in the value chain and market environment (e.g., volatilities in demand, supply side delays, and fluctuations in component prices) and respond quickly and flexibly to those changes within the current value chain (e.g., reduced material change times, reduction of manufacturing lead times, and adjustment of delivery capacity) (Eckstein et al., 2015).

5.2. Study Limitations

This research was conducted during a pandemic, where the environmental challenges were different from normal conditions. These conditions may have affected the psychological condition of the respondents when answering the questionnaire. Even though measurable answer choices were used, bias cannot be completely eliminated.

5.3. Future Research

Future researchers are advised to take a more in-depth look at one of the results of this study, where strategic agility did not have a significant positive impact on improving organizational performance. From the literature review, it was found that this difference occurred because previous research on the effect of strategic agility on firm performance was carried out in companies that could quickly change product and service offerings, while the impact of strategic agility on organizations that did not have the capacity to quickly change product and service offerings has not been previously studied. To be able to generalize these findings, research using the same model is needed, but with a focus on industries that do not change their product and service offerings quickly, such as the car manufacturing industry.

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Data Availability Statement: Upon a reasonable request, the supporting data of this study can be provided by the corresponding author.
Competing Interests: The authors declare that they have no competing interests.
Authors’ Contributions: All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.
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