

# Small and Medium Enterprises (SMEs) Performance

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SMEs are one of the business entities that make a significant contribution to economic conditions in Indonesia. This is the reason why information about the condition and presence of SMEs is important data for the government as an indicator for Indonesia's economic conditions, especially during the COVID-19 pandemic.

innovation capability

open innovation

organizational performance

## 1. Introduction

In the current era of the COVID-19 pandemic that has hit the whole world globally, the implementation of open innovation for organizations is a challenge, especially because the pandemic has devastated not only economies, but also people's lives on a broader level. Such an impact has gone beyond what occurred during the previous global economic crises <sup>[1]</sup>. Referring to the current situation, open innovation is seen as a critical aspect of economic recovery, both during and post pandemic <sup>[1]</sup>.

Achieving an optimum level of performance is essential for businesses. Organizational performance can be identified through one's financial condition and ability to produce goods and services, i.e., operational performance <sup>[2]</sup>. In their strategy to innovate, businesses have engaged external parties to leverage internal capabilities <sup>[3]</sup>. Innovation can be defined as an organization's capability to leverage their entire resources to create a new capability and value <sup>[4]</sup>. The concept explains that by carrying out innovation activities, an organization can explore the use of every resource it has, both from internal and external to the organization. Innovations that are successfully carried out by an organization will produce something new that adds value to the organization. <sup>[4][5]</sup>. Developing innovation capability becomes important, for innovation plays a key role in determining the longevity and growth of the organization <sup>[3][6]</sup>. The capability to develop ideas is one of the priorities in an organization. Ideas developed are all ideas that exist in the organization, both ideas from employees for routine operational activities, as well as from executives related to short and medium-term strategic activities in the organization. While the ideas of top managers are related to the development and long-term strategy for the organization <sup>[7]</sup>. There are several innovation concepts for organizations, namely top-down, bottom-up, and outside-in <sup>[8]</sup>. Each of these concepts can be implemented according to the conditions or needs of the organization <sup>[9]</sup>. The concept of innovation in an organization is also influenced by the culture of the organization. Top-down innovation is an innovation that originates or is proposed by the leadership of the organization, which is then formally communicated to every element in the organization <sup>[8][9]</sup>. Top-down innovation requires a very high level of management involvement, which will drive future organizational performance, while bottom-up innovation allows existing and managed

innovations to come from every party in the organization and allows every member to participate in the innovation. [8][9]. Outside-in innovation is an innovation concept that adopts or brings innovation sources from outside to enter the organization through social networking activities [8]. The innovation concept developed is a collaboration of the three concepts there are top-down, bottom-up, and onside-in. That collaboration will support the implementation of open innovation in achieving more optimal organizational performance, especially during the current pandemic. The surge of the knowledge economy has intensified global competition, and simulatenously technological advancement has pushed innovation into the spotlight of business competition [7][10].

Innovation is a mechanism by which an organization produces new goods, processes, and systems necessary to adapt to changes in the market, technology, and competition mode [6][7][10]. Innovation is a complex activity that involves the production, diffusion, and translation of knowledge in the form of new or modified products or services; or the development of new production or processing techniques [11].

Successful innovation could bring uniqueness unavailable to other organizations, which becomes a source of advantage [12][13]. Innovation can also be seen as a process to increase the organization's must-have capabilities regardless of the organization's scale [12]. Innovation pertains to a continuous improvement within the organization to optimize its performance [14]. The ability to innovate is a critical success factor for the company's future growth and performance, and is one of the main ways companies can thrive in the midst of competition and gain profits. Strategy to innovation activities, along with a shared innovation vision, is critical when creating innovation capabilities. Innovation capability is a theoretical framework that can describe actions to support and increase the success of innovation activities [15].

Businesses, including SMEs, have been facing challenges in creating a balance between economic, social, and environmental factors [16]. SMEs are one of the business entities that make a significant contribution to economic conditions in Indonesia. This is the reason why information about the condition and presence of SMEs is important data for the government as an indicator for Indonesia's economic conditions, especially during the COVID-19 pandemic. The Indonesian Statistic Center is the government agency that manages the data. Data obtained from the Indonesian Statistic Center in 2020 is one of the bases for obtaining information on the condition of SMEs during the COVID-19 pandemic. Through this data, SMEs can be identified early that can survive or are forced to close or stop their activities [17]. According to the Statistic Center Indonesia 2020, there was a decrease in the number of SMEs in data collection locations by 7.06%, and by the end of 2020, there were 11.25% of SMEs that stopped operating [17]. SMEs need a strategy to innovate optimally [18]. In open innovation, knowledge used to facilitate innovation can be obtained externally or internally [18][19][20]. The stakeholders involved are suppliers, consumers, competitors, and the public. Open innovation explores sources of innovation from the outside (inbound) and the inside (outbound), which then be used to accelerate internal innovation, expand the market, and create innovation for external parties [19]. SMEs are involved in many open innovation activities, especially for matters related to the market, such as meeting customer demands or competing with competitors. This has become more and more ubiquitous, especially in the face of the fourth industrial revolution [20]. Open innovation activities are carried out by exploring sources of innovation, both from outside (inbound) and from inside

(outbound), which are then used to accelerate internal innovation, expand markets, and create innovations for external parties [21]. These activities are carried out by SMEs in many places, especially to support industry 4.0 [22].

SME owners or leaders need to find ways to maintain their business in a sustained manner, especially for SMEs in developing countries [21]. SMEs are considered an important factor in driving the economy and are one of the indicators of economic development of a country [22][23]. SMEs make a significant contribution to a country's GDP, both for developed and developing countries [21][22][23]. Therefore, the performance of SMEs is an important thing to study during a pandemic to determine necessary measure that can support them. In Indonesia, SMEs are one type of businesses that is quite vulnerable in facing the economic consequence of the current pandemic. On the other hand, SMEs are considered labor intensive, so the existence of SMEs can reduce unemployment, especially because of the economic impact of the economic crisis due to the pandemic [21]. Seeing the importance SMEs both in developing and developed countries, the performance of SMEs needs to receive a more in-depth attention and study, especially in the current pandemic condition. SMEs are the backbone of a country's economy [24], and their performance is one of the factors that measure the success of economic activities in a country [22][24].

Open innovation only occurs when organizations, in this case SMEs, collaborate actively with other parties and contribute to the market exploitation, market test, and demand analysis [2]. Open innovation currently has a paradigm that adopts several influences from the existence of digital technology and the global transformation of information and knowledge. This open innovation was later known as open innovation 4.0 [25]. Industry 4.0 is relevant for SMEs because with open innovation 4.0 in SMEs, access to sources of innovation will become wider which allows every stakeholder to be directly involved in the development of SMEs. Open innovation 4.0 provides space for all stakeholders to contribute more optimally to the company or organization. The transformation of information and knowledge, as well as its digitization, is important to the implementation of open innovation 4.0. Therefore, global collaboration networks and activities significantly impact open innovation 4.0. The open innovation 4.0 framework considers customer community as an important factor in the improvements made by a company or organization through open innovation activities. The involvement of the consumer community will accelerate the process of improvement and open innovation because it will increase the awareness of a company or organization with regards to the importance of innovation process. The company will develop a new capability to engage the consumer community through digital media to collect and analyze data that is part of a dynamic ecosystem in a value chain [25]. This affects the open innovation process for both large, medium, and small-scale companies, including SMEs.

In general, SMEs have difficulty identifying business possibilities outside of their core competencies. This can happen because of a focused product portfolio, a specific knowledge base, and limited financial resources. SMEs can strengthen their position by implementing open innovation [26]. SMEs are more dependent on external knowledge than large companies. Therefore, SMEs would benefit from collaboraiton with external parties to carry out an open innovation process [27]. These collaborative activities can increase the value created from innovative activities [28]. With limited resources, SMEs need to find a way to achieve economic industry in production, effectively market their products and offer support services that meet customers' needs. Collaboration with external parties is one of the ways that SMEs enable open innovation [2][3][27]. Open innovation can be understood as the

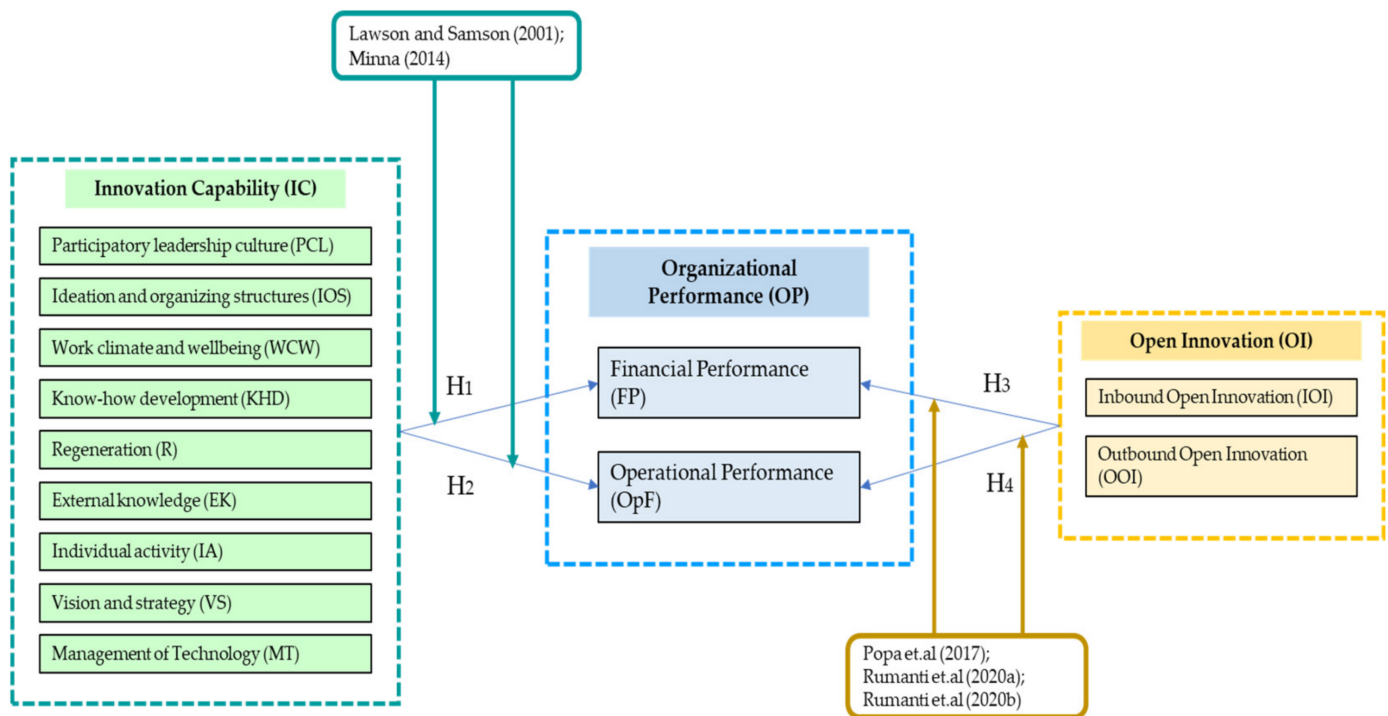
antithesis of the traditional vertical integration model, where Internal innovation activities lead to outputs in the form of products and services developed internally; these products and services are then distributed by the company to external parties [29]. Individual characters in an organization or company will have an impact on the innovation process [30], including the process and implementation of open innovation. Individual attitudes and motivations in innovating will affect the results of open innovation carried out by the company [31]. The process of adopting innovation by individuals or employees in an organization or company contributes to the organizational culture. Open innovation based on organizational culture will help organizations to seize new opportunities. This is because human or individual factors have a role in determining the success of the innovation process, hence the human factor cannot be ignored in order so that optimal innovation process can take place [31].

The challenge for SMEs to optimize their performance has become even more difficult with the rise of the global pandemic of COVID-19 [32]. This happens to all organizations across the economic scale. In the innovation process of an organization or company, the adaptability of individuals or employees in the company is important, especially during the implementation of new technologies and in sustaining the ability to compete in today's dynamic market. During the COVID-19 pandemic, the implementation of open innovation is a challenge for organizations or companies. The negative impact of the pandemic is not only on the economic system but also on various social aspects of society that may not have been imagined before will become a global crisis [1]. For SMEs, the role of individuals is very important in determining the readiness and success of these SMEs to carry out open innovation, especially the ability to respond efficiently to international market dynamism. Thus, Human capital is essential for the development and commercialization of innovations, and plays a key role in the survival and success of the innovation process, especially in the face of today's seemingly dynamic market environment [33].

SMEs need to work their way out in accessing resources necessary for implementing their innovation activities, particularly in open innovation [34]. Prior research argued and described the influence of innovation capability on organizational performance [3][6]. Yet there seems to be a lack of elaboration regarding factors that support innovation capability and the innovation needed to enhance structure performance within the context of the pandemic. Limited access and activities during the pandemic need to be mitigated by virtually optimizing the supporting factors of open innovation, e.g., implementing information technology and information management system [35][36].

Several previous research explained that innovation capability has an influence on the performance of an organization [3][6], and empirically open innovation has an influence on organizational performance, both in the form of operational performance or financial performance [2][27]. Researchers investigated the independent influence of each construct, namely innovation capability and open innovation, on the performance of the organization/company. Innovation capability is an important factor in organizational or company performance, especially financial performance [37], and significantly influences innovation performance in organizations or companies [38]. There is a study that explains the weak relationship between the construct of innovation capability to open innovation, which is less than 0.5 [39], and the relationship between the construct of open innovation to performance with a correlation of 0.16 [39]. At the same time, other studies explain a strong relationship or influence between innovation ability and organizational performance [40]. Therefore, a research model was constructed in

which innovation capability and open innovation were directly related to organizational performance. Two constructs are independent variables on the basis that each construct has an influence on the performance of the organization or company, as has been conveyed through the model elaboration scheme in **Figure 1**.



**Figure 1.** Elaboration scheme for research model.

Considering such a gap, this research conducts an empirical study elaborating intrinsic factors on innovation capability as well as the influence of open innovation on SME's efforts to attain optimal performance.

## 2. Firm Performance

There are several concepts that are used in measuring firm performance, i.e., operational performance and financial performance [2][3]. Operational performance is usually measured as a set of several dimensions that reflect the internal operations of an organization in terms of the elements of the product, process quality, efficiency, and productivity. In some studies, operational performance was measured through the productivity, effectiveness, and efficiency of internal operations, while financial performance is measured through measures that include profitability, return on investment, and share price [3][6]. Increasing innovation, especially in financial performance, has an impact on the company's competitiveness. The competitiveness of a company can be supported by effective performance measurement. As a consequence, the company must know the factors that affect its performance and manage it effectively [11][41][42].

## 3. Innovation Capability

In an organization or company, innovation capability integrates the organization's key capabilities and resources to stimulate innovation successfully in an effort to achieve optimal organizational performance [43]. Innovation capability also reflects the ability to continuously transform knowledge and idea into a new product, process, and system for the benefit of the organization as well as its stakeholders. Innovation capability can be seen as a dynamic capability that shows an organization's ability to integrate, build, and reconfigure both internal and external competence to deal with a constantly changing environment [44]. Innovation capability also acts as a funnel that can seek, locate and develop potential innovations to be streamed to the core process in the organization [6]. A high degree of innovation capability enables the organization to bring efficiency together with creativity [6] and helps businesses to have the ability to create and develop excellent new products; this capability is a critical in order for businesses to survive and prosper in a long term [45]. That is why innovation capability is regarded as a valuable asset for firms in terms of providing and sustaining competitive advantage and implementing corporate strategy; it also helps the organization to form, manage, and integrate multiple capabilities or stimuli to innovate successfully [42]. Innovation capability is considered one of the factors that influence the policies of an organization, including SMEs [27]. Several studies have proposed direct relationship of innovation capability to organizational performance [3][38][46][47]. It indicates that innovation capabilities determine firm performance [48]. Thus, the development and analysis of indicators in innovation capabilities is important in facilitating performance evaluation in SMEs [49][50]. It is critical because innovation is believed to be the most important driver of organizational performance and serves as a key role in the survival and growth of an organization [3]. It is believed that innovative firms would have better firm performance compared to those that do not innovate. Innovative organizations show a higher level of economic growth and productivity than non-innovative ones [37]. The organizational performance itself can be measured through two dimensions, namely financial performance, and operational performance [2]. Moreover, the study provided a positive relationship between organizational innovation capability and performance [3][6].

## 4. Open Innovation

Open innovation refers to the inflow and outflow of knowledge activities undertaken by an organization to accelerate internal innovation, expand the market as well as use external innovation [27]. Open innovation illustrates how valuable ideas can be obtained from the internal and external parts of organizations, including from the market. The approach of such a paradigm plays a role in understanding the market demands [18][51][52]. Open innovation could be considered a contemporary paradigm for implementing innovation. Within open innovation, there are several forming components such as shared creativity, collaboration, and the attainment and management of the latest knowledge [53]. Open innovation is a way for organizations to increase their innovation capability in terms of technology and competition [54]. An organization can gain knowledge from the external environment to improve its capabilities in doing business and in managing existing knowledge [53][54]. Open innovation is one of the effective driving forces to encourage improving the performance of an organization. The development of open innovation can maintain the company's level of innovation and continuous innovation momentum so that an organization or company can face the increasingly fierce industry competition [55].



The occurrence of an open innovation process within SMEs could change the organizational system for the better, i.e., improvement in collaboration, knowledge among employees, and market knowledge [56]. Open innovation entails an internal and external openness that is relevant to creating innovation. Some of the benefits of the knowledge flow to and from the organization include encouraging internal innovation, expanding markets, and creating external innovations for other parties [27].

Open innovation is divided into two parts: inbound open innovation and outbound open innovation [2][57]. Inbound open innovation is realized by exploring the sources of innovation such as information and new technology from external parties, e.g., customer, supplier, competitor, government, consultant, university, or research organization [25]. Outbound open innovation is realized by developing internal innovation capabilities so that the result can give to external organizations through licensing, patents, or contracts to gain financial and non-financial benefits [19][27]. Open innovation is one of the requirements for an organization to achieve optimal performance, especially for financial and operational performance [2]. Based on the compiled literature on open innovation, the third and fourth hypotheses were constructed:

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