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***Research Paper***

# What Drives the Adaptive Capability of Indonesian SMEs during the Covid-19 Pandemic: The Interplay between Perceived Institutional Environment, Entrepreneurial Orientation, and Digital Capability

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## Abstract

The Covid-19 pandemic has caused disruptive business environments that demand firms to develop their adaptive capacity to survive. This paper aims to investigate the antecedents of adaptive capability by integrating the resource-based view, dynamic capability, and institutional theories to explain firms' adaptive capability during the pandemic in the context of Indonesia. A causal model was developed and tested using Partial Least Squares (PLS) with 262 participants. The findings reveal that institutional environment is the key driver of enhancing SME's entrepreneurial orientation and developing their digital capabilities to adapt to disruptions triggered by the pandemic. In practice, the government needs to revise its support programs to assist SMEs in advancing their entrepreneurial skills and digital capability to operate their businesses in digital markets. Training on design thinking, digital technology, and Artificial Intelligence should be incorporated into any support programs provided to strengthen SMEs' competitiveness through digital capability and entrepreneurial orientation. The government also needs to revisit the current IT infrastructure to provide affordable IT technologies to support the digital capability of SMEs.

**Keywords:** **A**daptive capability, Perceived institutional environment, Entrepreneurial orientation, Digital capability, SMEs, Covid-19.

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# Introduction

Enterprises are currently facing environmental turbulence, rapidly changing customer needs and increasing competition, demanding businesses to adapt to survive and grow. For instance, the Covid-19 pandemic has impacted nations globally and hindered economic growth due to massive restrictions caused by lockdowns and social distancing, resulting in diminishing supply and demand across many industries (Perdana et al., 2021). The challenges posed by the pandemic may potentially devastate SMEs' performance, as they face difficulties in accessing raw materials and financial resources (Thorgren and Williams, 2020). Nonetheless, SMEs need to stay agile and expand their entrepreneurial activities (Soluk et al., 2021) even in the most unprecedented environments by building their Adaptive Capability (henceforth AC) (Eshima and Anderson, 2017). As a result, scholars advocate the development of AC (Akgün et al., 2012) which is described as the firm's ability to adjust its understanding of market conditions to exploit business opportunities. Firms with AC tend to proactively engage in scanning market conditions in response to changes in the external environment (Lockett et al., 2011). Although previous studies recognized the potential benefits derived from developing AC (Akgün et al., 2012, Chryssochoidis et al., 2016, Eshima and Anderson, 2017), little is known about the mechanisms and antecedents of this development (Mitchell et al., 2020). Moreover, previous studies did not include entrepreneurship literature insights or integrate institutional contexts where economic downturns or environmental changes occur. Therefore, they concluded that firms with AC will perform better despite sudden shocks or challenges (Korber and McNaughton, 2017).

This study contributes to the existing literature by adopting a more comprehensive conceptual model that incorporates the resource-based view (RBV), dynamic capability (DC), and institutional theories to provide a more nuanced understanding of the factors that contribute to the development of AC. According to the RBV theory, entrepreneurial orientation (EO) is a rare, valuable, inimitable, and non-substitutable resource (Wiklund and Shepherd, 2003). Poudel, Carter, and Lonial (2019) added that EO is a strategic resource that creates positive value for firms. Meanwhile, scholars who extended the RBV theory to the DC perspective proposed that AC represents a key component of dynamic capabilities. This is because it mirrors a firm's capability to rearrange resources and organize processes quickly to fulfill sudden changes, thereby capturing the cores of dynamic capabilities (Gibson and Birkinshaw, 2004). As firms do not operate in isolation, considering the role of a perceived institutional environment (IE) that generates changes is crucial. The perceived institutional environment (IE), e.g., government policies, influences the EO of SMEs (Biru et al., 2018). In addition, prior studies illustrate that differences in a country's perceived institutional environment may promote or impede firms' activities due to business risks and restrictions, access to supplies, and transaction costs (Su et al., 2017). Although the IE offers risks and opportunities to businesses, their significance may vary depending on the perceptions and understanding of firm owners to act on them (Wu et al., 2019). Thus, this study includes SME owners/managers' perceptions of perceived institutional environments where they operate their businesses.

The Covid-19 has caused a global health emergency, in which the Indonesian government strived to mitigate by enforcing social distancing, community lockdowns, working from home, isolation, contact tracing, and large-scale social restrictions (Lutfi

et al., 2020). Consequently, SMEs are the most vulnerable sector that experienced critically disrupted marketing processes (Effendi, Sugandini, & Istanto, 2020). The effect of social distancing restrictions has forced these enterprises to utilize information and communication technologies (ICT) in their business operations (Rozak et al., 2021), provide online shopping infrastructure along with offline facilities, and use digital media to maintain communications with customers. Therefore, digitalization is a solution for SMEs to market their goods (Effendi, Sugandini, & Istanto, 2020), though many Indonesian SMEs lack adequate technical skills to operate ICT technologies (Sugandini et al., 2018).

Meanwhile, the economic effects of the pandemic have caused over 63% of SMEs to experience declining sales by more than 30%, leading to difficulties in paying bills, loans, and employee remuneration (Effendi, Sugandini, & Istanto, 2020). Various policies were launched to ease their burdens and promote their survival (Pramono et al., 2021), including financial and capital assistance, reduced electricity tariffs, tax incentives, and loan restructuring (Najib et al., 2021). The implementation of these directives is expected to create positive results for Indonesian SMEs (Lutfi et al., 2020). Moreover, the Indonesian government allocated 42.3 trillion rupiah (USD 3 billion) to help SMEs recover. Despite the substantial effort made by the government, only 5.9% of Indonesian SMEs survived and improved (Bahtiar, 2021), which led to a study on the factors that contribute to AC to serve as evidence-based guidelines for policy-makers and SME owners to enhance the survival of their firms during the pandemic. Therefore, this study is aimed at exploring several issues, namely the contribution of the perceived institutional environment, EO, and digital capability to the development of AC; the impact of perceived institutional environment on EO and digital capability; the ability of EO to mediate the relationship between IE and AC; and the mediation of digital capability on the relationship between IE and AC.

This study offers several contributions. First, the provision of insights on the application of the RBV, dynamic capability, and institutional theories in a developing country that is experiencing economic recovery during a pandemic. By incorporating EO and these three underpinning theories, this study systematically investigates the highly-sought phenomenon of the development of AC from an entrepreneurial perspective. Second, previous studies emphasize the direct impact of the perceived institutional environment on entrepreneurial activities, resulting in mixed results (Dai and Si, 2018, Zhou, 2017). Hence, the perception of owners or top management personnel concerning the effect of SMEs and their perceived institutional environment on EO still warrants further examination (Dai and Si, 2018). This study also attempts to provide a more nuanced understanding of the interplay between the perceived institutional environment and firms in a developing and under-investigated country through its analysis of Indonesian firms (Su et al., 2017). Finally, the study explores policies imposed by the local government, particularly support programs, towards the speedy recovery of SMEs and their impact on strategies to expand their entrepreneurial activities in the sudden changing environment. The following section reviews pertinent literature that led to the development of a hypothesized model depicted in Figure 1, which is tested in this study.

# Literature Review

## Institutional Environment and Adaptive Capability

Institutions influence firms' internal resources and capabilities as they respond to their environment (Sarta et al., 2021). Enterprises operating their businesses in increasingly fluctuating environments need to be aware of their changing competition, alongside customers' behavior and other factors that may impact their business opportunities and development of competitive advantage. The criticality of understanding the context in which firms operate their businesses and develop adaptive capabilities implies that enterprises cannot be considered in isolation from their environment (Sherehiy et al., 2007).

Adaptive capability depicts firms' capacity to quickly adjust to the changes in the external environment by reconfiguring organizational resources (Eshima and Anderson, 2017). It implies immediate and strategic response, flexible maneuverability, time-based competition, and the ability to offer and modify products, services, or processes efficiently (Mulyana and Hendar, 2020). Firms that build adaptive capabilities can sense changes as their strategic and operating environments become turbulent and respond readily with pertinent adjustments. Based on the availability of creativity to discover opportunities to act on, they can adapt to changing environments (Nemkova, 2017).

According to Wu et al. (2019), the AC of firms may be impacted by differences between countries' perceived institutional environments due to their important roles in determining organizational behavior and strategic choices. For example, a more favorable perceived institutional environment can greatly reduce uncertainties, thereby supporting firms' capacity to adapt to their changing business environment (Shubham et al., 2018). Likewise, adaptable organizations can foresee potential risks and exploit advantages emerging from their institutional contexts. Hence, it is hypothesized that:

**H1** Perceived institutional environment significantly influences adaptive capability.

## Perceived Institutional Environment and Entrepreneurial Orientation

Due to the current significance of the institutional environment in providing opportunities for entrepreneurs, there is a growing body of literature that aims to investigate the link between institutional contexts and EO. The concept of institutional embeddedness suggests that regulatory policies, prevailing values and norms, expectations, and material infrastructure in countries concurrently regulate and limit entrepreneurial opportunities (Eijdenberg et al., 2019). Furthermore, Stenholm et al. (2013) concurred that the perceived institutional environment has a prevalent role in creating a fertile environment for firms to expand their entrepreneurial activities or orientation. For instance, firms need to reconfigure their resources to align with their strategic decisions and are bound by the regulations controlling the location of their business operations. Subsequently, the institutional environment is defined as "the set of working rules used to determine the eligibility to make decisions in an arena, the actions that are allowed or constrained, the aggregation rules to be used, procedures that must be followed, the required information, and the payoffs to be assigned to individuals dependent on their actions" (Ostrom, 1990, pp. 51). It strongly suggests that

institutions may limit or advance the strategic decisions of firms through the enactment of prevailing values, regulations, or policies, signifying that entrepreneurial activities are interactively influenced by institutional factors (Biru et al., 2018).

The institutional environment comprises four different pillars: regulative, cognitive, normative, and conducive aspects (Stenholm et al., 2013). The regulatory aspect represents regulations, rules, policies, and laws that govern an individual or organizational behavior and their impact on the national economy (Veciana and Urbano, 2008). Conversely, the cognitive pillar represents the cognitive framework through which business actors interpret information with their possessed knowledge and skills. The normative aspect refers to social norms, values, and beliefs, which people in a business enterprise pursue in order to achieve their organizational objectives. Lastly, the conducive pillar represents the extent to which the institutional arrangements can produce the expected quality of entrepreneurial activity in a country. This last aspect captures the capability of a country to provide the general support required to generate potential high-impact entrepreneurs (Bowen and De Clercq, 2008). Since the condition of the perceived institutional environment may explain the variance in firms' EO, it is hypothesized that:

**H2** Perceived institutional environment significantly impacts firms' entrepreneurial orientation.

**Perceived Institutional Environment and Digital IT Capability**

Digital IT capability is defined as a firm's ability to utilize technological advancements, i.e., software or hardware, to develop values for its business, customers, and suppliers (DeLone et al., 2018). Firms with digital IT capability can create digital products/services and gather feedback from customers, suppliers, or other external networks, which are integrated into their digital facility creation (Denner et al., 2018). For example, the use of social media to promote firms' products or services can positively impact firms by cutting marketing costs while managing customer relationships. As new challenges evolved due to the Covid-19 pandemic, many businesses were forced to pivot in the way they operate, to survive and grow. Due to constant lockdowns initiated by governments, companies needed to develop their capability to digitally connect with all stakeholders (e.g., suppliers, employees and customers). For example, enterprises had to invest in digital IT technologies as customers transitioned to online shopping (Eller et al., 2020).

Firms that intend to develop digital capability cannot do it alone without any help from the government, especially SMEs. Managing digital transformation by creating digital capabilities poses multiple and complex challenges for both firms and governments. The main challenges derive from the fact that investing in digital technologies requires large investment while no promised digital dividends can be guaranteed and must prepare institutional environments in which digital capabilities are meant to establish (Hana, 2018). More importantly, it is essential that institutions help minimize uncertainty in digital IT adoption and provide support for local businesses to adapt to the new competitive environment. Research has shown that the institutional environment can influence the decision making of company managers (Sheng et al., 2018) and promote technology adoption (Du, 2018). Furthermore, Wei, Xu and Liu (2021) recommended that firms in emerging economies should consider the impact of

the institutional environment when developing IT capability. Thus, the institutional environment must coherently align their strategies, new policies, and infrastructure so SMEs are inclined to develop their digital capabilities to compete in disruptive markets (Mazzucato, 2013). Despite the prominence of digital capability in enhancing business processes, the relevance of institutional contexts is still overlooked in previous studies (Chen et al., 2017). Meanwhile, institutional theory postulates that firms' strategic postures or capabilities (i.e., digital capability) are affected by the institutional environments where they operate their businesses. Enterprises cannot successfully develop their digital capabilities without effective institutional implementation of government policies, laws, and entrepreneurship ecosystems (Sheng et al., 2018). Therefore, it is hypothesized that:

**H3** Perceived institutional environment significantly influences firm digital IT capability.

## Entrepreneurial Orientation and Adaptive Capability

Entrepreneurial Orientation (EO) describes a firm's strategic posture that can increase its value through entrepreneurial activities (Adomako, 2018). Entrepreneurial orientation is a formative construct that encompasses entrepreneurial behavior and management's attitude towards risks or risk-taking (Anderson et al., 2019). Entrepreneurial behavior is defined as firms' pursuit of new products, processes, or business models in new market or products. Meanwhile, risk-taking refers to firms' inherent inclination to implement strategic actions that may bear uncertain results. Based on this concept, firms' propensities of innovativeness and proactiveness fall within entrepreneurial behavior, whilst risk-taking is considered as an attitudinal dimension. Thus, firms with EO seek new products or services, processes, and business models to commercialize their innovations (Anderson et al., 2015). They embrace creativity and innovation while actively engaging in technology adoption experiments, alongside product, service, and process development in their attempts to be forward-looking and opportunity-seeking (Lisboa et al., 2011).

Firms with EO are proactive, innovative and take calculated risks, which can accommodate the significance of enterprises' AC. For instance, proactiveness promotes firms to exploit opportunities during dynamic environment changes by anticipating customers' preferences, regulations, economic shifts, or technological advancements. Innovativeness refers to organizational behavior to introduce novel products or services in the market. Firms that inherently possess this characteristic may create and develop their products, services, or processes to endure the turbulent environment (Rosenbusch et al., 2013). Meanwhile, risk-taking behavior facilitates firms to cope with uncertainty, react to competition, and swiftly take the initiative in customer-market opportunities attributed to the fast-changing environment (Sherehiy et al., 2007). Opportunities and challenges arose for firms that were readily adaptive to the sudden changes (Irawan, 2020). As enterprises with strong EO tend to develop the capability to adapt by possessing the characteristics to harness opportunities in the market (Munawar, 2019), it is hypothesized that:

**H4** Entrepreneurial orientation significantly influences adaptive capability.

## Digital IT Capability and Adaptive Capability

Digital IT capability is defined as a firm's ability to utilize technological advancements, i.e., software or hardware, to develop useful values for its business, customers, and suppliers (DeLone et al., 2018). Firms with digital IT capability can create digital products/services and gather feedback from customers, suppliers, or other external networks, which are integrated into their digital facility creation (Denner et al., 2018). For example, the use of social media to promote firms' products or services can positively impact firms by cutting marketing costs while managing customer relationships (Eller et al., 2020).

As firms embrace digital IT capability, they can monitor the changing environment and rapidly adjust or improve their products, services, or business models to fulfill customer needs in the sudden changing competition (Li et al., 2018). This is due to the opportunities provided by digital IT capability, allowing firms to access the most current information. Hence, they can sense and react to market opportunities and threats, as well as quickly assess their current business model or strategy to remain agile in the competitive environment (Srinivasan and Swink, 2018). Also, scholars affirm that digital IT capability can enhance the adaptive capability of firms by strengthening their ability to collect, accumulate, scan, circulate, and process information to attain superior business agility (Chan et al., 2019). Therefore, in light of these findings, it is hypothesized that:

**H5** Digital IT capability significantly influences firms' adaptive capability.

## The Mediating Role of Entrepreneurial Orientation

The interaction between the perceived institutional environment and AC can be direct and indirect. Enterprises cannot operate in isolation because the perceived institutional environments where they function can either support or constrain their entrepreneurial activities through the enactment of regulations, taxes, bureaucracy and so forth. Entrepreneurs must follow existing regulations and norms to secure legitimacy, endorsement, and resources from their important stakeholders (Su et al., 2017). Consequently, enterprises' EO may impact their adaptive capability as entrepreneurially-oriented firms use their proactiveness, innovativeness, and risk-taking behavior to generate creative products, services, techniques, or solutions that will aid their adjustment to turbulent environments (Munawar, 2019). Thus, we can posit that:

**H6** Entrepreneurial orientation significantly mediates the impact of perceived institutional environment on adaptive capability.

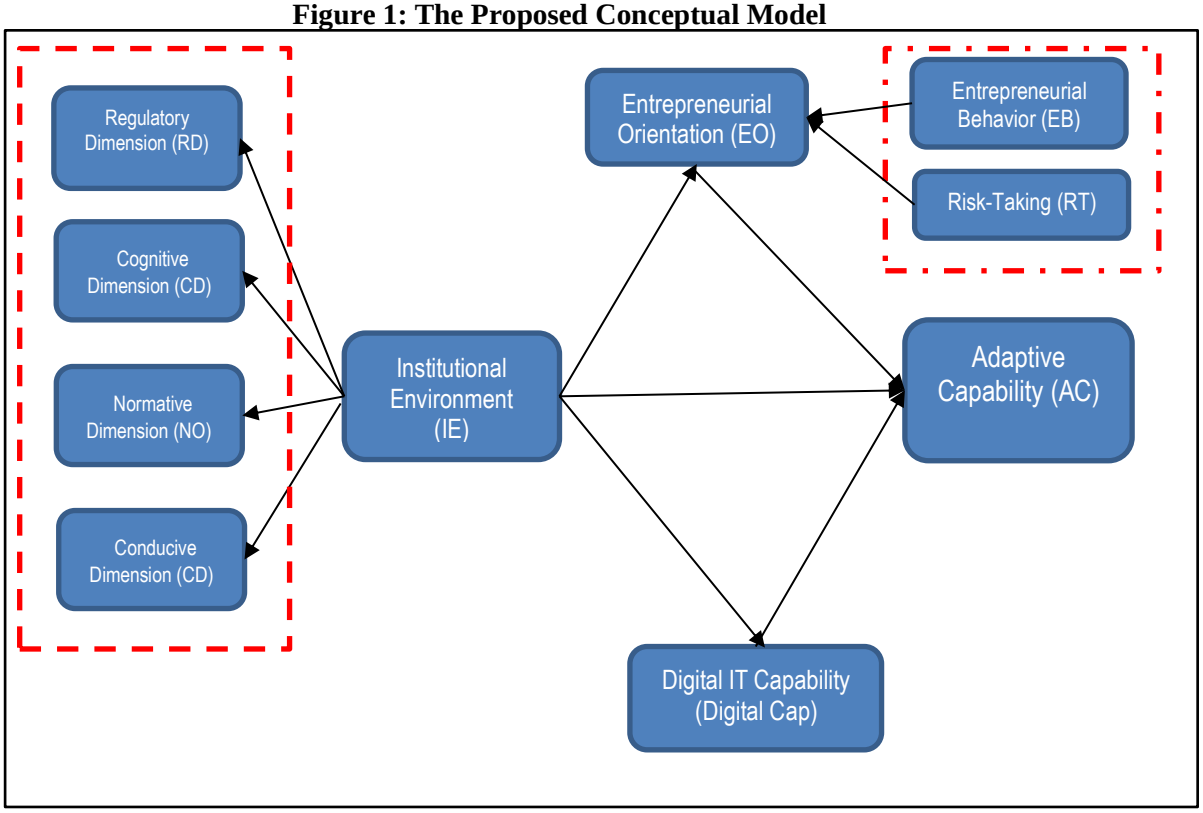
## The Mediating Role of Digital IT Capability

The state's role in providing such a synergized digital ecosystem in collaboration with local governments or business associations is critical in assisting SMEs in developing their digital IT capability. Subsequently, the local government may endorse the utilization of ICT in the economy and society by providing affordable infrastructure, Internet access or necessary equipment, accessible cloud computing, or other digital

payment systems (Hanna, 2018). In this situation, the Indonesian government trained and offered pertinent digital IT capability support programs to accelerate the digitalization of SME business, specifically during the lockdown and social distancing (Bahtiar, 2021). As a result, SMEs began using digital commerce, finance, and social media to promote their business and disseminate information among their customers (Priyono et al., 2020). This signifies that the emergence of SMEs' digital capability can occur due to the digital transformation ecosystem supported by the state. For example, broad policies concerning the business environment and trade require ICT adoption and digital transformation. Government support, irrespective of providing subsidies or tax incentives, is significant in promoting the adoption of ICT or digital technologies into SME businesses. It can also provide advisory programs to encourage these enterprises to integrate e-commerce adoption into their business strategies. Hence, this study hypothesized that:

**H7** Digital IT capability significantly mediates the relationship between perceived institutional environment and adaptive capability.

**Figure 1: The Proposed Conceptual Model**




## Methodology

### Sample and Data

The hypotheses posited in this study were tested using survey data collected from CEOs/managers of SMEs operating in the retail sector for at least 3 years, improved their business and used digital IT. Meanwhile, the term 'SME' refers to the definition of SME stipulated by the Law of Small and Medium-sized Enterprises Number 20 of

2008, of which statistics revealed a survival rate of below 6 % during the pandemic, majorly comprising retail firms that used online platforms for their business (Bahtiar, 2021). In order to produce high power analysis, this study follows the guidelines suggested by Hair et al. (2014) to determine the minimum sample size required. Through purposive random sampling, 500 questionnaires were sent to SME owners or managers, and 262 were used for data analysis. Table 1 shows the demographic profile of the businesses.

**Table 1: Demographic Profiles of Respondents (*n*=262)**

| Demographic Profiles | Percentage (%) |
|---|---|
| **Gender:** | |
| Male | 61 |
| Female | 39 |
| **Education:** | |
| Below high school | 29 |
| High school | 48 |
| Diploma | 16 |
| Bachelor's graduate | 7 |
| **Do you receive any training on IT/Digital Technology from the government?** | |
| Yes | 67 |
| No | 33 |
| **Do you receive any business assistance provided by the government?** | |
| Yes | 82 |
| No | 18 |
| **Years established** | |
| 3 – 5 years | 13 |
| 6 – 10 years | 33 |
| 11 – 15 years | 26 |
| >15 years | 28 |
| **Industry (Retail Business):** | |
| Apparel | 37 |
| Footwear | 10 |
| Accessories | 6 |
| Food & Beverage | 20 |
| Personal & Household care | 8 |
| Electronic & Household appliances | 14 |
| Furniture | 2 |
| Toys | 3 |
| **Sales channel chosen for online business:** | |
| Social media (e.g., Instagram, Facebook, Twitter, etc) | 38 |
| Online platforms (e.g., Tokopedia, Shopee, Bukalapak, JDID, etc) | 42 |
| Corporate website | 20 |
| **Developed digital IT capability:** | |
| < 3 months after the pandemic | 29 |
| 3 - <6 months after the pandemic | 42 |
| >= 6 months after the pandemic | 18 |
| Before the pandemic (at least 3 months) | 11 |

### Measures

The measurements of adaptive capability were adopted from Mitchell et al. (2020) and comprised four items with 7-point Likert scales. These indicators had been tested in other Asian nations and were mostly cited by studies conducted in emerging countries. The perceived institutional environment was measured using indicators developed by Biru et al. (2018), which embraced the regulatory, normative, cognitive, and conducive aspects. Meanwhile, the indicators of entrepreneurial orientation were adopted from Anderson et al. (2015), which revisited the original measurements of EO and modeled it as a second-order formative construct. Lastly, digital IT capability was measured by seven indicators from the work of Chen et al. (2015), (Cenamor et al., 2019, Parida and Örtqvist, 2015, Wales et al., 2013). A pre-test with 30 respondents was conducted prior to distributing the questionnaires, and no major changes were required.

## Results

The data analysis in this study adopted the Partial Least Square-Structural Equation Model (PLS-SEM) because it is a comprehensive multivariate analysis. This method is an appropriate technique for assessing a structural model that has reflective and formative constructs, as well as testing a theoretical framework with a predictive stance (Hair et al., 2019). The first step in the data analysis was to evaluate the outer measurement model followed by an inner model assessment and mediation analysis. Details on the steps and results are provided below.

### Assessment of the Outer Measurement Model

Assessing the outer measurement model involved evaluating reflective and formative measures, while the model estimation assessed the relationships between the indicators, the measurement, and structural models (Hair et al., 2019). The guidelines for assessing the outer model were adopted from Becker et al. (2012), who used the repeated indicator approach. Subsequently, Table 2 shows that the retained indicators fulfilled the factor loading threshold value of >0.7, Average Variance Explained >0.5, and composite reliability >0.7, as suggested by Hair et al. (2019). Meanwhile, the discriminant validity test (Table 3) revealed that all items had HTMT ratios below 0.90, suggesting that the constructs are different from each other (Henseler et al., 2015).

**Table 2: Measurement Model and Reliability Statistics**

| Construct | Indicator | Loading | CR | AVE | α |
|---|---|---|---|---|---|
| Regulatory Dimension (RD) | RD1 | 0.84 | 0.87 | 0.69 | 0.78 |
| | RD4 | 0.87 | | | |
| | RD5 | 0.79 | | | |
| Cognitive Dimension (CO) | CO3 | 0.96 | 0.96 | 0.92 | 0.92 |
| | CO4 | 0.95 | | | |
| Normative Dimension (NO) | NO2 | 0.87 | 0.89 | 0.80 | 0.85 |
| | NO3 | 0.92 | | | |
| Conducive Dimension (CD) | CD1 | 0.91 | 0.96 | 0.85 | 0.94 |
| | CD2 | 0.94 | | | |

| | | | | | |
|---|---|---|---|---|---|
| | CD3 | 0.97 | | | |
| | CD5 | 0.95 | | | |
| IE | | | 0.92 | 0.50 | 0.90 |
| Entrepreneurial Behavior (EB) | EB1 | 0.83 | 0.91 | 0.77 | 0.85 |
| | EB2 | 0.93 | | | |
| | EB4 | 0.86 | | | |
| Risk-Taking (RT) | RT2 | 0.86 | 0.84 | 0.72 | 0.71 |
| | RT3 | 0.83 | | | |
| Digital Capability (Digital Cap) | DCAP1 | 0.84 | 0.89 | 0.74 | 0.82 |
| | DCAP2 | 0.93 | | | |
| | DCAP3 | 0.82 | | | |
| Adaptive Capability (AC) | AC1 | 0.88 | 0.87 | 0.70 | 0.79 |
| | AC2 | 0.89 | | | |
| | AC3 | 0.73 | | | |

**Table 3: Discriminant Validity (HTMT)**

| | AC | CD | CO | Digital Cap | EB | IE | NO | RD_ | RT |
|---|---|---|---|---|---|---|---|---|---|
| **AC** | | | | | | | | | |
| **CD** | 0.286 | | | | | | | | |
| **CO** | 0.306 | 0.432 | | | | | | | |
| **Digital Cap** | 0.548 | 0.552 | 0.648 | | | | | | |
| **EB** | 0.307 | 0.856 | 0.527 | 0.773 | | | | | |
| **IE** | 0.367 | 0.623 | 0.767 | 0.775 | 0.878 | | | | |
| **NO** | 0.255 | 0.506 | 0.593 | 0.731 | 0.607 | 0.870 | | | |
| **RD** | 0.423 | 0.640 | 0.530 | 0.637 | 0.584 | 0.695 | 0.645 | | |
| **RT** | 0.363 | 0.865 | 0.512 | 0.801 | 0.627 | 0.634 | 0.725 | 0.791 | |

**Note:** AC=adaptive capability; CD=conducive dimension; CO=cognitive dimension; Digital Cap= digital IT capability; EB=entrepreneurial behavior; NO=normative dimension; RD=regulatory dimension; RT=risk-taking

In this study, EO was modeled as a formative construct consisting of entrepreneurial behavior (EB) and risk-taking (RT). The indicator validity was evaluated by comparing the significance level, sign, and magnitude of its relationships to its formative indicators. Also, the PLS Algorithm bootstrapping technique served to obtain the value of the significance level (Hair Jr et al., 2014). Table 4 indicates that EB had larger weights than RT in explaining EO.

**Table 4: Formative Measurements**

| | Weights | SE | VIF Values | *t*-Statistics | ρ Values |
|---|---|---|---|---|---|
| EB -> EO | 0.52 | 0.25 | 2.34 | 2.17 | 0.03 |
| RT -> EO | 0.55 | 0.24 | 2.33 | 2.27 | 0.02 |

**Note**: EB= entrepreneurial behavior; RT=risk-taking

## Assessment of the Structural Model

Collinearity analysis was conducted before analyzing the structural model to ensure there was no bias. The results revealed VIF values below 5, showing that there was no collinearity issue in the constructs (Hair et al., 2017). A bootstrapping resampling technique was also adopted to create 5,000 sub-samples for assessing the structural relationships (Hair et al., 2019). Table 5 shows the evaluation of the hypotheses.

**Table 5: Evaluation of Structural Model and Results**

| Hypothesis | β | SE | *t*-Stats | ρ value | Result |
|---|---|---|---|---|---|
| H1 : IE -> AC | 0.30 | 0.07 | 3.95 | 0.00 | Supported |
| H2 : IE -> EO | 0.77 | 0.03 | 27.89 | 0.00 | Supported |
| H3 : IE -> Digital Cap | 0.35 | 0.06 | 6.24 | 0.00 | Supported |
| H4 : EO -> AC | 0.31 | 0.07 | 4.59 | 0.00 | Supported |
| H5 : Digital Cap -> AC | 0.35 | 0.04 | 8.67 | 0.00 | Supported |

**Note**: IE=perceived institutional environment; EO=entrepreneurial orientation; AC=adaptive capability; digital cap=digital IT cap

The results confirmed that digital capability (β=0.35, *t*-stat= 8.67, ρ<0.005) was the major contributor of all the variables that impact firms' adaptive capability with a moderate effect size of 0.28. This was followed by entrepreneurial orientation (β=0.31, *t*-stat= 4.59, ρ <0.05), and perceived institutional environment (β= 0.30, *t*-stat= 3.95, ρ<0.005), with effect sizes of 0.20 and 0.19, respectively. Then, the latent constructs' explained variances were assessed using $R^2$ to obtain moderate scores of 0.61 and 0.60 for adaptive capability and EO, respectively, alongside a weak level of 0.12 for digital capability (Hair et al., 2019). Finally, the structural model's predictability was further examined by calculating the value of a non-parametric Stone-Geisser test or $Q^2$. This test employs a blindfolding procedure (Henseler et al., 2015) to generate residual variances and uses a proposed threshold value of $Q^2 > 0$ (Urbach and Ahlemann, 2010). The blindfolding result produced a $Q^2$ value of 0.59 for adaptive capability, which is above 0, indicating that the structural model exhibits appropriate predictive power for this construct.

## Mediating Effects

The analysis of the mediating effect followed the guidelines by Zhao et al. (2010) as suggested by Memon et al. (2018). The specific indirect effect was calculated by creating 5,000 samples with the bootstrapping procedure provided by Smart-PLS version 3. Subsequently, the results presented in Table 6 demonstrate that all mediating relationships were supported. Consistent with previous studies, Entrepreneurial Orientation (EO) mediated the relationship between perceived institutional environment and adaptive capability (β=0.24, *t*-stat=4.59, ρ<0.05) (Munawar, 2019, Rosenbusch et al., 2013). In the context of this study, the regulations enacted by the Indonesian government pose barriers and opportunities for SMEs. According to the Institutional, Resource-Based View, and Dynamic Capability theories, changes in regulations due to the Covid-19 pandemic have driven entrepreneurial firms to seek business transformations that appear suitable for coping with the current situation. As a result, organizations with EO attempt to rearrange their internal resources, processes,

and strategies to establish their adaptive capability to assist their struggle in disruptive environments (Zhu et al., 2017).

**Table 6: Mediation Results**

| **Mediator: Entrepreneurial Orientation (EO)** | **β** | **SE** | ***t*-Stats** | **ρ Values** | **Result** |
|---|---|---|---|---|---|
| H6: IE -> EO -> AC | 0.24 | 0.05 | 4.59 | 0.00 | Supported |
| H7: IE -> Digital Cap -> AC | 0.12 | 0.02 | 5.31 | 0.00 | Supported |

Following the dramatic changes in business environments caused by the Covid-19 pandemic, governments assist firms to develop their digital capabilities by providing training on digital capability for SMEs, increasing internet speed at the national level, and creating digital entrepreneurship ecosystems by providing a shared economy. Thus, firms that effectively develop digital capabilities can utilize their capabilities to generate products, services, and models to fulfill the new needs of customers (Muditomo and Wahyudi, 2020). Therefore, the mediating role of digital IT capability in explaining the relationship between perceived institutional environment and adaptive capability appears very crucial for SMEs, specifically in this age of digital technology ($\beta$= 0.12, *t*-stat=5.31, $\rho<0.05$).

## Discussion

This study reveals that the Indonesian SMEs' capacity to adapt is driven internally by their digital capability and entrepreneurial orientation. Both digital capability and entrepreneurial orientation are triggered by SME's perceived institutional environments. The ability of SMEs to transform their businesses digitally is shaped by policies and directives enacted by the Indonesian government in taking advantage of social restrictions imposed during the pandemic. Notwithstanding the SMEs' liabilities to transform their businesses online and follow their peers, enterprises with IT capabilities can quickly adapt their processes and strategies to the changes in business environments.

Findings show that the institutional environment significantly impacts adaptive capability (H1), which is consistent with previous studies (Sarta et al., 2021, Wu et al., 2019). The rationale is that institutions pressure and support enterprises to behave in certain ways that conform to the regulatory, normative, cognitive, and conducive elements enacted by the government. Accordingly, firm owners will formulate their adaptive capabilities and strategies to suit the turbulent environments and comply with the requirements set by stakeholders (Shubham et al., 2018). In Indonesia, the government imposed large-scale physical restrictions on business activities and operations. This was perceived by SME owners as a challenge to convert to digital business models. As a result, SMEs use online platforms and tools to promote their products and services and online payments for transactions (Klein and Todesco, 2021).

Meanwhile, perceived IE rule and shape firms' behavior, and to some extent, limit their business profits (Biru et al., 2018). Previous studies (Biru et al., 2018, Stenholm et al., 2013) confirm the present findings that a significant link exists between IE and EO

(H2). The "rules of the game" set by formal institutions can influence entrepreneurs' decisions to run their businesses and impact their economic growth (Acs et al., 2018). Moreover, the social rules within which entrepreneurs conduct their businesses may incentivize or constrain their activities in achieving their goals (Khurana et al., 2020). Likewise, perceived IE also impacts the SMEs' digital capability (H3) through rules and regulations within which entrepreneurs conduct their businesses may incentivize or constrain their activities in developing their digital capability (Wei et al., 2021). The Indonesian government is fully aware of the impact of digital technologies in accelerating business processes and operations (H3). The state sets policies and regulations to change the way SMEs operate their businesses to supply better IT infrastructure to exploit opportunities for online businesses and assist SMEs in their business transformation processes (Li et al., 2018). To accommodate the disruptions taking place in the markets, the government has expanded the country's internet bandwidth, restructured IT infrastructure (although this still seems inadequate to facilitate digital businesses in the country) and provide support programs for SMEs to develop digital capabilities (Hana, 2018).

Further, the study shows a relatively moderate effect size of entrepreneurial orientation significantly on firms' adaptive capability (H4). Previous literature concurs that firms with intrinsically embedded innovativeness, proactiveness, and risk-taking characteristics can effortlessly expand their adaptive capabilities as their core competitive advantage in volatile environments (Zhu et al., 2017), such as the pandemic. In the situation of the Indonesian SMEs, entrepreneurially oriented firms tended to rapidly take actions to alter disruptive changes caused by the pandemic. They flexibly tackle "abnormalities" in uncertain situations until they can operate their businesses normally. In performing this, their interaction with their customers and sales are increased through online platforms and their use of digital payments is expanded. Along with government support, entrepreneurial firms adapt more critical parts of their business process while pursuing creativity. For example, in fashion businesses, they adopt virtual fashion showrooms and improve the User Experience (UX) design for their websites. They also utilize subsidies from the Indonesian government to maintain their short-term work, reallocate resources and processes to fulfill new demands from customers, and sell their products through novel channels (Muditomo and Wahyudi, 2020).

In this era of digitalization, there have been changes in the communication and exchange of value between organizations and consumers due to the rise of augmented reality that has revolutionized interaction with the physical environment (Ferreira et al., 2019). Hence, firms need to monitor and align their technology landscape and knowledge to enhance their adaptive capability (Ramaswamy and Ozcan, 2016). Indonesian SMEs were compelled to adopt digital technology on a wider scale in a short time during the pandemic (H5). As employees worked remotely due to the physical lockdown, SMEs urgently transformed their business into digital formats. In this study, 38% of the respondents started their online business by using social media, e.g., *Instagram* and *Facebook*, to promote their businesses, while 42% chose online platforms or shared economy, e.g., *Tokopedia*, *Bukalapak*, *Shopee*, as well as 20% developed websites to sell their offers. In addition, 32% of the respondents used digital payments or e-wallets, such as *Gopay*, *Dana*, *Sakuku*, 25% employed electronic banking services, while the rest used both e-wallets and e-banking services. Firms with digital IT capability can accrue advantages from the reduced economic costs of data

search, storage, computation, transmission. Hence, they can swiftly redesign their business models and enter into new markets whilst monitoring the new behavior pattern of their customers and competitors. This denoted that SMEs with digital capabilities can expand their flexibilities to utilize opportunities for creating value (Acs et al., 2021), indicating that H3 was supported in this study, as evidently claimed by prior investigations (Belitski et al., 2021, Clauss et al., 2019, Vadana et al., 2019).

This investigation has three main limitations. First, sample size was modest, reducing statistical power. Moreover, the use of cross-sectional design limits causal inferences. A longitudinal study, in the future, may re-examine the proposed model in this study within longer period of time. Second, as the current investigation is concerned with only Indonesian retail SMEs, future research should include enterprises from different sectors. Lastly, this study also relied on owners/CEOs' perceptions as the only data source that may distort perceptions over the respective perceived institutional environments. Future research may involve regulators or industry experts to gain a justified understanding of institutional contexts.

## Implications

This study contributes to current management theory by demonstrating the interplay between the Resource-based View, Dynamic Capability, and Institutional theories in explaining the development of the adaptive capability of Indonesian SMEs during the Covid-19 pandemic. Firms can use and align their strategic resources to create capabilities that are deemed critical in the changing institutional contexts caused by the pandemic. By aligning their resources and creating new capabilities, they can exploit the existing markets or explore new ones. Since enterprises have to circumvent market disruption and uncertainties to maintain firms' survival due to the pandemic, firms need to identify critical capabilities for creating changes in institutional factors and disruptive markets. Applying the institutional theory in this study has extended related studies, which have been mostly conducted in developed countries (Su et al., 2017).

## Implications for Asian Business

Indonesia has highlighted the significant role of e-commerce as the backbone of its national economy. With a value of USD21 billion in 2019, the country had the largest and fastest-growing ASEAN e-commerce market, which soared on average by 88% per year from 2015 to 2019 and is expected to reach USD 82 billion by 2025 (OECD, 2021). This rapid growth of the Indonesian e-commerce market, along with the Covid-19 outbreak, has inspired SMEs to convert their business into digital formats to capitalize on lucrative e-commerce opportunities. However, the advancement of the digital business of SMEs depends on the role of perceived institutional environments in providing better infrastructure (e.g., speedy internet technologies, effective training, and online platforms) for firms to exploit lucrative opportunities from digital markets. Moreover, the business transformation of the Indonesian SMEs is more reactive in nature and tends to follow the steps taken by their peers so as not to create uniqueness, which will jeopardize their opportunities to develop a competitive advantage over their competitors. Thus, two main implications need to be considered for government to enhance SME performance in the era of digitalization.

First, the government needs to consider policies, support programs and infrastructure that may enhance the entrepreneurial skills of SMEs to tackle the liabilities caused by size and funding to grow and adapt to disruptions in digital markets. As changes are unpredictable and limitless in digital markets, well-equipped SMEs with entrepreneurial skills can easily outperform their rivals. However, the majority of the training and support programs provided by the Indonesian government focus on managerial and financial issues (e.g., training on financial reporting, managing business-like firms) while overlooking future challenges generated by technologies. This means more programs on empowering entrepreneurial orientation required in the digital era (e.g., training on the application of design thinking for small firms, innovative ideas for business), and digital capabilities (e.g., promoting more shared-economy platforms to allow SMEs to run e-commerce, training on e-commerce or digital skills) or technologies are required to strengthen SMEs and enable their competition in e-commerce markets.

Second, governments need to expand their support in advancing the digital capabilities of SMEs and creating less expensive IT technologies and platforms for SMEs as the pandemic has pushed SMEs to improve their digital capabilities under time constraints and restructure their resources to accommodate new ways of selling their products. Currently, SMEs utilize digital technology to interact with their customers and vendors, promote and sell their products, and monitor their competitors. However, the liability caused by their limited size and skill sets is a critical concern because the gaps in digital technologies hinder their use in predicting market trends and anticipating competitors' strategies.

Further, the Indonesian government can provide the facilities for artificial intelligence (AI) technologies and training for SMEs to remain competitive. In fact, the use of AI has been introduced to assist SMEs in Malaysia with loan applications (Ali et al., 2020), whilst 80% of Singaporean SMEs have adopted digital solutions for their businesses as they focus on boosting their productivity. Moreover, the government encouraged the adoption of AI and robotics to improve productivity as they grapple with macroeconomic issues (Ecosystm, 2020). By using AI, firms can generate innovation by using algorithms to predict future market trends and needs long before customers even realize them. E-commerce business players can perform all activities and meet consumers' demands by analyzing their behavior and potential opportunities with AI through the application of algorithm analysis on demand-supply behavior present in virtual marketplaces (Kumar and Kalse, 2021).

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