

# Creating digital ecosystem for small and medium enterprises: the role of dynamic capability, agile leadership and change readiness

Ardian Adhiatma, Olivia Fachrunnisa and Nurhidayati  
*Department of Management, Universitas Islam Sultan Agung,  
Semarang, Indonesia, and*

Tina Rahayu  
*Department of Management, Universitas Muria Kudus, Kudus, Indonesia*

Received 12 December 2020  
Revised 3 June 2021  
21 September 2021  
7 January 2022  
15 April 2022  
Accepted 14 June 2022

## Abstract

**Purpose** – The digitization efforts for small and medium enterprises (SMEs) as a result of advances in information technology are challenging, with one of them being the creation of digital ecosystems for SMEs. This study aims to develop a model of the relationship between SMEs' readiness to change, agile leadership and dynamic capability to implement a digital ecosystem for SMEs in the creative industry in Semarang, Central Java, Indonesia.

**Design/methodology/approach** – A survey methodology was used in this study. Respondents in this study were creative industry SMEs in Semarang, Central Java, Indonesia. SMEs in the creative industry sector were chosen as samples as they require digital technology to manage their business development, production and distribution, customer relationships and to innovate in their businesses. In total, 250 creative SMEs, selected based on a purposive random sampling method, were included in this study. Data were analyzed using structural equation model-partial least square.

**Findings** – This study provides current insights and future needs for implementing digital ecosystems in SMEs in Indonesia's creative industries. It also identifies three critical conditions for dealing with Industry 4.0: organizational readiness to change, agile leadership and dynamic capability.

**Originality/value** – In response to information technology advancements, this study proposes a new model for implementing digital ecosystems for SMEs. Furthermore, this study adds knowledge about the concept of a service-oriented technology ecosystem to help SMEs operate more efficiently. It focuses on the interaction of entities to improve the system's utility, gain benefits and promote information exchange.

**Keywords** Digital ecosystems, Dynamic capability, Agile leadership, Readiness to change, SMEs creative industry, Change readiness, SMEs

**Paper type** Research paper

## 1. Introduction

The digital economy, especially in the current post-pandemic era, presents the biggest challenges and opportunities for small and medium enterprises (SMEs) in Indonesia. Recently, SMEs in the creative sector of Indonesia's economy are encouraged to use technology to expand market access and minimize the impact of the COVID-19 pandemic on their businesses. It was concluded that SMEs must be able to change the paradigm of



This research is funded by Center of Research and Community Service, Universitas Islam Sultan Agung (UNISSULA), in collaboration with Universitas Muria Kudus, research grant scheme 2020.

---

thinking by maximizing technology. The fundamental challenge was increasing SMEs access to digital services and increasing their capabilities so that they could produce products that could compete with foreign products that dominated e-commerce space. In the digital era, all business sectors, especially SMEs, are required to adapt to changes to survive and have a sustainable competitive advantage. Digitalization in the digital economy has the potential to make it easier for SMEs to facilitate market expansion when marketing their products not only in the domestic market but also in the international market or at least across regional or cross-border markets. Therefore, SMEs need a digital ecosystem that can increase their business network, competitiveness and economic growth through innovation (Martin, 2009). SMEs must be able to create a well-integrated digital business ecosystem as part of their digitization efforts. Furthermore, they can continue to innovate in the face of competition and the uncertain dynamics of changing business environments.

According to Matopoulos *et al.* (2012), the digital ecosystem is an evolutionary, self-regulating system that can contribute to the sustainability of local and regional development through a well-defined, integrated and widespread software platform for organizations (Kutsikos *et al.*, 2014), which is an organization's strategic plan (Kraus *et al.*, 2019). A digital-based environment can achieve an organization's strategic plan (Kraus *et al.*, 2019; Fachrunnisa and Hussain, 2013). The digital ecosystem approach for SMEs offers a way to protect an open innovation environment. It aims to increase the potential for a more effective contribution to dynamic markets and sustainable economic growth (Dimi *et al.*, 2008). Establishing a digital ecosystem in SMEs necessitates the development of dynamic capabilities to investigate the effects of information systems or specific information technology capabilities on organizations. Finally, dynamic capabilities are also considered a suitable approach for studying the effects of information systems or specific information technology capabilities of organizations (Rialti *et al.*, 2019). With this dynamic capability, it is hoped that SMEs will be able to sustain their readiness to change in all SMEs stakeholders, especially owners. To face the current dynamics of the digital economy, it is critical to always be ready to respond to digital transformation in the business environment, in addition to capability. The use of information systems and technology in SMEs can help to develop strategies for dealing with all problems in the future.

Dynamic capability is the development of skills and human resources for external change, strategy formulation and implementation and adaptation to changing environmental needs. Individual readiness to change investigations can help people learn how to improve their ability to deal with the dynamics of organizational change and effectively implement the program. Achieving dynamic capability in a rapidly changing environment must be balanced by a readiness to change (Vakola, 2014). According to a global survey conducted by The McKinsey Quarterly (2008), while organizations can expect to survive only by constantly changing, two-thirds of all change initiatives surveyed failed. This is something that organizations should definitely think about more so that they are truly prepared when changes are required. When an organization is prepared for rapid change, it achieves a higher level of dynamic capability. In today's competitive world, a greater emphasis on problems is required, such as how quickly and flexibly an organization can react to changes that regularly occur in the environment. The concept of change readiness is attractive because employees' reactions are critical in any organizational change (Oreg *et al.*, 2011). In today's competitive business world, where there is uncertainty and dramatic changes as a result of the pandemic, a different policy and strategy are required. Greater emphasis is placed on issues such as how quickly and flexibly organizations of all sizes can respond to ongoing changes in their surroundings. These issues are based on an important paradigm known as agility (Perker *et al.*, 2015). Agility is regarded as a critical

---

foundation for modern organizations and is required for their survival (Sanatigar *et al.*, 2017). Rapid changes in market conditions and organizational flexibility demonstrate the importance of self-organized teams and agile leadership in organizations (Dikert *et al.*, 2016).

This study aims to fill two research gaps. First, most literature on dynamic capability focuses on innovation performance and competitive advantage (Ansari *et al.*, 2016; Desai, 2013; Filippini *et al.*, 2012; Balocco *et al.*, 2012). Second, only a few studies have focused on digital ecosystems affected by dynamic capabilities. Therefore, this study examines the effects of dynamic capability on digital ecosystems, including innovation, competitive advantages and survival capabilities. In addition, leadership agility and change readiness are antecedents that will be tested for their effects on dynamic capability. Therefore, based on the research gaps and the aforementioned descriptions, this study examines the importance of dynamic capability for SMEs, with change readiness and agile leadership as the determining conditions. Furthermore, this study also investigates the impact of the dynamic capability of SMEs' digital ecosystem realization of the SMEs.

## 2. Literature review and hypothesis development

### 2.1 Change readiness and dynamic capability

In an organizational context, change readiness means "collective cognitive and emotional inclination to accept, embrace, and implement a particular change" (p.52). In addition, Weiner (2009, p. 1) explains change readiness in organizations as "organizational members' shared resolve to implement a change (change commitment) and shared belief in their collective capability to do so (change efficacy)." Armenakis *et al.* (2007) defined "readiness" as an individual's beliefs, attitudes and intentions regarding the extent to which change is required and the organizational capacity to make that change successfully. To achieve this favorable response, the leader is responsible for the proposed changes, as well as being instructed to compile a message of change. It comprises five sentiments of readiness: differences, efficacy, appropriateness, primary support and personal valence (Hemme *et al.*, 2018). Furthermore, Hemme *et al.* (2018) state that organizations must be prepared for change implementation and management if they do not want to fail in their efforts. An individual's change readiness is a critical success factor because an organization can change and act only through its members. Even the most collective activities within an organization are the result of merging members' activities (Vakola, 2014). At the organizational level, change readiness refers to the joint commitment of organization members to implement change (Budhiraja, 2019). In other words, change readiness refers to the beliefs, attitudes and intentions of individuals in implementing and managing change. It is also a determining factor for success as it is based on shared beliefs in the group's ability to adapt to change. As mentioned by Teece (2018), change is an important factor in dynamic capability. The ability of SMEs to always be ready to respond to change will further enhance their ability to adapt to the changing dynamics of the business environment.

Dynamic capabilities are related to organizations' ability to adapt adequately and promptly to changing environments by reconfiguring internal and external processes and resources with existing competencies (Gaur *et al.*, 2014; Eisenhardt and Martin, 2000). For their resource base, dynamic capability enables the dissemination of knowledge to everyone in the organization (Rialti *et al.*, 2019). It is also the ability to maintain competitiveness, especially in a changing market environment (Wilden *et al.*, 2013). The lack of dynamic capability is viewed as a threat that can impede a company's ability to maintain performance in a new and changing environment (Gnizy *et al.*, 2014). According to Mauludin *et al.* (2013), dynamic capability is an organization's ability to create customer value to develop, renew and maintain resources (including tangible, intangible and human resources). Dynamic capabilities are defined by persistent long-term patterns of company

---

behavior that facilitate adaptation (Zollo and Winter, 2002). Hence, dynamic ability refers to an organization's ability to adapt adequately and promptly to changing environments for its resource base. It is also the ability to stay competitive by disseminating knowledge to everyone within the organization on a consistent and long-term basis.

The dimensions to measure the impact of change readiness on dynamic capabilities include leadership, organizational culture, communication, training, measurement and reward systems (Al-Balushi *et al.*, 2014). In addition, Antony (2014) identified five primary readiness factors:

- 
- (1) leadership and vision;
  - (2) commitment and management resources;
  - (3) connecting Lean Six Sigma with company strategy;
  - (4) customer focus; and
  - (5) choosing the right person.

Uluskan *et al.* (2018) measured change readiness using the following dimensions: commitment of managers as well as employees to commitment of managers as well as employees to adapt to new business policy implementations, communication of information, clearly defined (financial) benefits/outcome of quality methods, clear definition of customer requirements and knowledge and training in quality methods. Vakola (2014) measured the effect of change readiness using the dimensions of core self-evaluations, perceived impact of change, trust in management, communication climate and job satisfaction. Furthermore, Budhiraja (2019) states that the determinants of change readiness consist of top management involvement, organizational infrastructure, employee attributes, employee attitudes, active involvement of employees, development of skill set, augmented social interaction and systematization of the change.

Organizations, especially SMEs, must consider change readiness as the primary objective while working on increasing their dynamic capability. They must prepare themselves to adapt to all changes using various strategies. According to Andreeva and Chaika (2006), change management is an important component in the development of dynamic capability, including in this case change readiness management. According to several previous studies (Hemme *et al.*, 2018; Uluskan *et al.*, 2018; Vakola, 2014), change readiness affects organizational engagement and dynamic capability. Dynamic capability is based on the development of skills and human resources for external change, strategy implementation and adaptation to changing environmental needs (Mauludin *et al.*, 2013). Bruns (2014) states that change readiness affects the dynamic ability of an individual or organization to acquire and convert knowledge. Therefore, change readiness is critical for smooth business development, especially in SMEs, which currently have an excellent potential to advance the country's economy. According to Chênevert *et al.* (2019), change readiness is critical for employee retention as its absence can lead to higher employee absenteeism and turnover. This means that an individual's lack of preparedness in the face of change results in poor adaptability to the dynamics of the business environment, as evidenced by high levels of absenteeism and turnover. Therefore, the first hypothesis of this study is as follows:

*H1.* There is a significant relationship between change readiness and dynamic capability.

### *2.2 Agile leadership and dynamic capability*

Organizational success is significantly influential on leadership, which encourages dynamic capability. One form of dynamic capability is agile leadership which can identify changes

---

and decision-making strategies quickly. According to Sanatigar *et al.* (2017), leadership agility refers to the agility in influencing others and making desired changes. Leaders with high capabilities can guide the team and continuously influence team behavior by defining, spreading and maintaining the vision of the organization (Perker *et al.*, 2015). Nimble entrepreneurs are obsessed with offering and enhancing value to their customers. In agile organizations, “customer focus” means that the organization member has a clear view of key customers and can see how their work adds value to them (Denning, 2018). Furthermore, according to Marques (2018), business environmental changes are rapid, and agility is the key to thriving in the business ecosystem. Agility, along with flexibility and speed, is regarded as an essential skill for managers. This skill can facilitate greater organizational success by keeping managers prepared to face today’s business challenges (Buhler, 2010).

Agile leadership is a critical element that can help an organization realize the dimensions of dynamic capability, namely, sensing, searching, seizing, shifting and shaping (Baškarada and Koronios, 2018). According to Perker *et al.* (2015), the dimensions of agile leadership include a sense of urgency and direction, hard work upfront – setting expectations and norms, sharing responsibility and mutual accountability, effectively recognizing problems and making decisions, instilling commitment and trust among members, balancing individual and group needs cohesively without stifling individuality, confronting differences and dealing with conflicts, dealing with minority opinions effectively and using effective communication methods. Agile leadership is defined by the ability to deal with change, organizational views, adaptive systems, recognition of the limitations of external controls, a humanistic approach to solving the problem as a whole, the collective ability of autonomous teams as a basic problem-solving mechanism, limiting advance planning to a minimum based on the assumption of uncertainty, adaptability, reacting to results emerging from self-managed teams and managing outcomes (Gardner *et al.*, 2005). Other dimensions of agile leadership include a customer-first mindset, a focus on the future road map, the continuous creation of new businesses, multiple paths to progress, willingness to take risks and acquire new institutional skills and the transformation of institutional skills into new businesses (Denning, 2018). According to Sanatigar *et al.* (2017), agile leadership can be measured using the aspects of collaboration and nurturance, diversity acceptance, competency, innovation and creativity, transparency and trust, flexible structure, appropriate and smooth regulations and directives, new methods and processes for performing tasks, robust high speed and updated hardware infrastructure and appropriate and timely software and programs. Following Sanatigar *et al.* (2017), this study provides a new method for the analysis, measurement and development of organizational agility constructs in the performance of public service organizations. Several other studies have also stated that agile leadership affects an organization’s dynamic capabilities (Denning, 2018; Marques, 2018; McPherson, 2016; Perker *et al.*, 2015; McKenzie and Aitken, 2012). Therefore the second hypothesis of this study is as follows:

H2. There is a significant relationship between agile leadership and dynamic capability.

### 2.3 *Dynamic capability and digital ecosystem*

According to Sussan and Acs (2017) and Liu *et al.* (2018), digital ecosystems are self-regulating, scalable and sustainable systems consisting of heterogeneous and interrelated digital entities that focus on interactions between entities to increase system utility, gain benefits and promote information exchange. Kraus *et al.* (2019) state that the digital ecosystem has a self-generative nature that works on service-oriented logic, where users can also act as providers at the same time. Dini *et al.* (2008) conclude that the digital ecosystem approach offers a way to protect open innovation environments and increase potential. The inclusion of SMEs in the emerging

knowledge economy with expected benefits will contribute more effectively to dynamic markets and sustainable economic growth. In an increasingly intense globalization arrangement, digital ecosystems can make global production networks more inclusive and participatory style of organization, resulting in positive effects on innovation and economic growth. There, digital ecosystem is a concept for a service-oriented technology ecosystem that aims to make operations in the digital sector and interactions between organizations easier to improve system utilities, gain benefits and increase information exchange.

Dynamic capability refers to an organization's ability to react to a changing environment appropriately and quickly by reconfiguring internal or external processes and resources to match existing skills (Yu *et al.*, 2017). Dynamic capabilities enable the dissemination of knowledge to everyone in the organization (Rialti *et al.*, 2019), which is required for their resource base and capabilities to remain competitive, especially in the face of changing dynamic market environments (Schilke *et al.*, 2018). According to Gnizy *et al.* (2014), dynamic capabilities can be measured using marketing program adaptation and local integration.

Oliva *et al.* (2018) measure dynamic capabilities by considering the integration of individuals' expertise in the organization, culture, orientation and leadership and corporate strategies. Other aspects of dynamic capabilities are markets, technologies and regulations (Park *et al.*, 2018) sensing, seizing and transforming (Tallott and Hilliard, 2016), the ability to identify and explore emerging opportunities and new sources of competitive advantages (Bamel and Bamel, 2018; Schilke *et al.*, 2018) sensing, learning, integrating and coordinating capabilities (Hernández-Linares *et al.*, 2021) and strong coordination and competitive response to rivals (Rehman and Saeed, 2018).

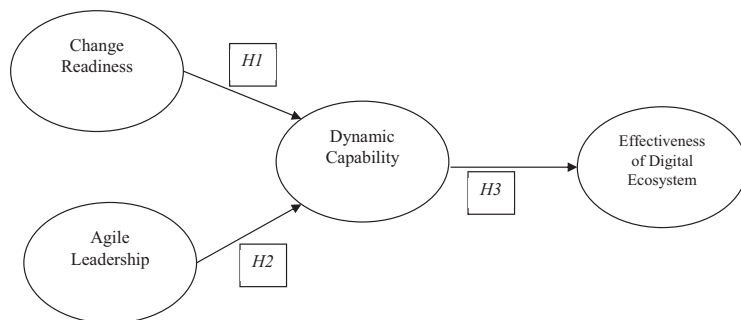
According to Gnizy *et al.* (2014), dynamic capability affects the success factors of digital transformation in SMEs, one of which is the flight of the digital business ecosystem. Furthermore, according to Park *et al.* (2018), company performance in driving digital business is influenced by dynamic capabilities as assessed by market conditions, technology and legislation (Rialti *et al.*, 2019; Oliva *et al.*, 2018; Tallott and Hilliard, 2016). Therefore, the third hypothesis of this study is as follows:

*H3.* There is a significant relationship between dynamic capability and effectiveness of digital ecosystem (Figure 1):

### 3. Methodology

#### 3.1 Data

This study adopts a survey methodology targeting creative industry SMEs in Semarang, Central Java, Indonesia, as respondents. Although the total number of SMEs in Semarang is



**Figure 1.**  
Research model

17,603 (Indonesian Central Agency of Statistic [BPS], 2021), there are no data on the specific number of SMEs that operate in creative industries.

Hence, we identified them by determining their products and services, such as fashion, retailing, service, food and beverages and handicrafts, using the Indonesian Ministry of Tourism and Creative Economy’s definition. We selected Semarang, the capital city of Central Java Province, because the region has the potential for the development of creative industry-based small businesses (Hapsari and Setiawan, 2019). Our respondents included SMEs that make substantial use of simple digital technology, such as social media for marketing and forming partnerships with customers. They conduct business using mobile phones with internet access. They conduct business using mobile phones with internet access. This is because mobile phones are a basic digital technology that allows users to access knowledge about various digital technology features via the internet and social media (Facebook, WhatsApp, Instagram, etc.).

We administered questionnaires to the owner/leader/manager of 350 creative SMEs who were selected using the purposive random sampling method. Our sample SMEs belonged to fashion, retailing, services, food and drinks and handicrafts sectors of the creative industry. The SMEs were selected based on the development and adoption of BPS (Indonesia Statistic Bureau, 2017) and Indonesia State Regulation No. 20 (2008), which classifies companies as SMEs according to the World Bank standard (World Bank Group, 2018), which includes businesses with annual sales turnover of US\$100,000 to US\$15,000,000 and having 10–300 full-time employees. Furthermore, this study includes only those SMEs that have been in business for at least one year.

The questionnaire contained questions that assessed the digital ecosystem, dynamic capability, change readiness and agile leadership. We also collected company data (type of industry, number of employees and annual sales) and consolidated the information in an *ad hoc* database created specifically for this study (see Table 1). The questionnaire also included a letter requesting its completion. Before conducting the survey, we conducted personal interviews with five SME owners to test the content of the questionnaire which had been previously verified by several academics, to determine the face and content validity of item measurements. The goal of the interview was to improve the quality of the items and rectify any grammatical errors. After three months, 250 usable survey responses were obtained (response rate: 71.4%). Owners and middle-level managers made up the majority of the respondents.

According to the results of our survey, 91 SMEs (36.4%) were found to be engaged in the fashion sector. Furthermore, 76 (30.4%) respondents were engaged in food/beverage

	Total	(%)
<i>Business field</i>		
Foods/beverages	76	30.4
Craft	52	20.8
Fashion	91	36.4
Retailer	8	3.2
Service	23	9.2
Total	250	100
<i>Number of employees</i>		
5–10	117	46.8
10–49	46	40.4
50–300	32	12.8
Total	250	100

**Table 1.**  
Respondent  
characteristics

businesses; 52 (20.8%) respondents were engaged in the handicraft business; 23 (9.2%) SMEs were engaged in the service sector; and only 8 (3.2%) SMEs were engaged in the retail business. Based on the number of employees, 117 (46.8%) SMEs had between 5 and 10 employees; 46 SMEs (40.4%) had between 10 and 49 (40.4%) employees; and only 32 (12.8%) SMEs had between 50 and 300 employees. Therefore, it is clear that the majority of SMEs sampled in this study had between five and ten employees.

Self-report questionnaire data with a cross-sectional research design and common method variance from the measuring method, rather than the constructs of interest, can generate systematic measurement error and bias in the evaluation of the underlying relationship among theoretical constructs (Podsakoff and Organ, 1986). Harman (1960) tested this problem using a one-factor test through exploratory factor analysis. The test yields a significant amount of common method variance, such as a single factor from factor analysis or the majority of the covariance among the variables of a single general factor (Podsakoff and Organ, 1986). The factor analysis (principal component analysis with varimax rotation) of the questionnaire items revealed the presence of six different factors with eigenvalues larger than one. These factors account for 77.2% of the total variance with the largest factor accounting for 29.8%. As there was more than one component and a distinct factor for the overall majority variation, common method variance issues are unlikely to interfere with the interpretation of the study's results.

### 3.2 Measurements

The loading factor value was used to test the measurement model in this study by referring to the measurement model using WrapPLS. The results of the measurement model test revealed that all measurements for each variable were significant. All of these variables were measured using a five-point Likert scale, where 1 = strongly disagree and 5 = strongly agree.

**3.2.1 Change readiness.** Change readiness is defined as the beliefs, attitudes and intentions of individuals to implement and manage change. It refers to the joint commitment of organization members as a determining factor for success based on shared beliefs in the collective ability to adapt to change. The factors used for measuring change readiness include organizational culture, organizational infrastructure, commitment and management resources and communication climate (Budhiraja, 2019; Al-Balushi *et al.*, 2014; Antony, 2014; Vakola, 2014).

**3.2.2 Agile leadership.** Agile leadership refers to a leader's ability to respond quickly to opportunities and threats in an information technology-based business environment. The factors used for measuring agile leadership include shared responsibility, effective problem recognition and decision-making, adaptive systems and flexible structures (Denning, 2018; Sanatigar *et al.*, 2017; Perker *et al.*, 2015).

**3.2.3 Dynamic capability.** Dynamic capability is an organization's ability to adapt quickly and appropriately to a changing environment. They also can remain competitive over time by disseminating knowledge to everyone in the organization. The dimensions of sensing, learning, networking, innovating, integrating and coordinating capabilities are used to measure dynamic capability (Hernández-Linares *et al.*, 2021; Oliva *et al.*, 2018; Park *et al.*, 2018; Rehman and Saeed, 2018; Tallott and Hilliard, 2016; Gnizy *et al.*, 2014).

**3.2.4 Effectiveness of digital ecosystem.** A digital ecosystem's effectiveness is defined as a service-oriented technology ecosystem concept that aims to improve system utility, obtain benefits and encourage information exchange by facilitating operations centered on digital industries and interactions between organizations. The characteristics of digital technology, institutional entrepreneurship and online social capital are used to measure the effectiveness



of a digital ecosystem (Kraus *et al.*, 2019; Wu and Chen, 2018; Sussan and Acs, 2017; Matopoulos *et al.*, 2012).

### 3.3 Data analysis

We examined our research model using structural equation model-partial least square (SEM-PLS) and conducted the analysis using WrapPLS software (Kock, 2015). Partial least square (PLS) is preferred to the covariance-based technique as it places fewer restrictions on sample size and distribution (Chin *et al.*, 2003). The results of the normality test (skewness and excess kurtosis) indicate that the majority of the latent variables were not normally distributed, confirming our decision to use SEM-PLS (Appendix 1). Although the measurement estimates and structural parameters occur concurrently, PLS model application is usually performed in two steps. The first phase evaluates the measurement model, which includes model fit, and the second phase estimates the structural model test of the connection between the hypotheses in this study (Kock and Moqbel, 2021). The results of the measurement model, presented in Table 2, reveal that all the measurements for each indicator variable were significant.

## 4. Findings

### 4.1 Measurement model

The most common method for determining a measurement model is to test its internal consistency, as shown in Table 3. The measurement model's internal consistency was assessed using Fornell and Larcker's (1981) method, composite reliability (CR), Cronbach's alpha and average variance extracted (AVE). To have satisfactory reliability, Cronbach's alpha and CR must be greater than 0.7; however, a value of 0.6–0.7 is still acceptable (Ghozali, 2014). The reliability test results revealed that our measurement model was adequately reliable.

Variable	Item indicators	Note	Loading factor	$\rho$ -values
Change readiness (CR)	Organizational culture	CR1	0.865	<0.001
	Organizational infrastructure	CR2	0.814	<0.001
	Commitment and management resources	CR3	0.927	<0.001
	Communication climate	CR4	0.805	<0.001
Agile leadership (AL)	Shares responsibility	AL1	0.777	<0.001
	Effective in problem recognition and decision-making	AL2	0.882	<0.001
	Adaptive systems	AL3	0.833	<0.001
	Flexible structure	AL4	0.816	<0.001
Dynamic capability (DC)	Sensing capability	DC1	0.816	<0.001
	Adaptive capability	DC2	0.835	<0.001
	Learning capability	DC3	0.751	<0.001
	Networking capability	DC4	0.752	<0.001
	Innovating capability	DC5	0.763	<0.001
	Integrating capability	DC6	0.729	<0.001
	Coordinating capability	DC7	0.697	<0.001
Effectiveness of digital ecosystem (DE)	Digital technology	DE1	0.804	<0.001
	Institutional entrepreneurship	DE2	0.760	<0.001
	Online social capital	DE3	0.806	<0.001

Source: WrapPLS output

**Table 2.**  
Measurement model

As shown in Table 3, Cronbach's alpha and CR for change readiness, agile leadership, dynamic capability and effectiveness of digital ecosystem are all above 0.7. If a measurement correlates with the constructs and latent variables, it has high reliability for assessing each latent variable. Therefore, the variables that were examined are valid and can be used in further tests.

The degree of variance that the latent constructs may have is described by the AVE value. Therefore, the greater the latent construct variance, the more the explicit variable is represented in the latent construct. AVE has been proposed as a criterion for determining convergent validity by Fornell and Larcker (1981) and Ghazali (2014). In this study, 0.4 was used as the limit. AVE values greater than 0.4 are still acceptable and adequate (Barclay et al., 1995).

4.2 Model fit

Model fit and quality indices can help researchers determine the degree of fit between the model and the data as well as the degree of model-wide collinearity, in SEM-PLS investigations. Following Kock and Moqbel (2021), we used average path coefficient (APC), average R<sup>2</sup> (ARS), average block variance inflation factor (VIF) (AVIF), average full collinearity VIF (AFVIF) and Tenenhaus GoF (GoF).

The APC, ARS and AARS indices all had values less than one-tenth of a percent probability of being achieved by chance, indicating that the model and data were extremely well matched. The AVIF and AFVIF indices indicated that multicollinearity did not exist at the latent variable block level (AVIF) or in the model as a whole (AFVIF). Finally, the GoF index indicates a high overall goodness-of-fit between the model and the data (Appendix 2).

In this study, Q<sup>2</sup> and R<sup>2</sup> values were used in the GoF testing. The R<sup>2</sup>-value test results in Table 4 suggest that the research model fits the GoF criteria. It can be concluded that the digital ecosystem's effectiveness has a moderate ability (0.34) in forecasting models (Hair et al., 2017). In other words, change readiness, agile leadership and dynamic capability can predict (34%) the effectiveness of the digital ecosystem, while the rest is influenced by other variables that are not examined in this study. The goodness-of-fit model was also revealed by the Q<sup>2</sup>-value test results. With a value greater than zero, all dependent variables include

**Table 3.**  
Model reliability measurement

Variables	CR	Cronbach's alpha	AVE
Change readiness (CR)	0.915	0.875	0.730
Agile leadership (AL)	0.911	0.870	0.721
Dynamic capability (DC)	0.908	0.881	0.585
Effectiveness of digital ecosystem (DE)	0.926	0.893	0.757

**Table 4.**  
Gof test

Variables	R <sup>2</sup>	Q <sup>2</sup>
Change readiness	0.34	0.602
Agile leadership		
Dynamic capability		
Effectiveness of digital ecosystem		

Source: WrapPLS output

the dynamic capability and effectiveness of digital leadership (Tenenhaus *et al.*, 2005). An endogenous construct model with  $Q^2$  values of 0.02, 0.15 and 0.35 has weak, average and strong predictive power, respectively. In this study,  $Q^2$  values were determined for all endogenous variables (dynamic capability [0.602] and digital ecosystem [0.368]). The predictive power of endogenous constructs is strong as indicated by values greater than 0.35.

#### 4.3 Structural model test

Essentially, the structural testing of the model is conducted to test the research hypothesis. Table 5 presents the results of the hypothesis testing which was performed using the path coefficient and  $\rho$ -value, referring to the model analysis using WrapPLS (Sugiardi *et al.*, 2021; Kock and Moqbel, 2021).

The results of the hypothesis testing in Table 5 indicate that all the hypotheses are supported. *H1* and *H2* assess the positive effect of change readiness and agile leadership on dynamic capability, respectively. Diamantopoulos *et al.* (2005) classified path coefficients under 0.30 as moderate influencers, 0.30 to 0.60 as strong and 0.60 and above as extremely strong influencers. Accordingly, change readiness (path coefficient = 0.529;  $\rho$ -value < 0.001) and agile leadership (path coefficient = 0.324;  $\rho$ -value < 0.001) have a strong, positive and significant effect on dynamic capability. Furthermore, *H3* is also confirmed implying that dynamic capability (path coefficient = 0.589;  $\rho$ -value < 0.001) has a strong impact on the effectiveness of the digital ecosystem.

## 5. Discussion

All three hypotheses (*H1*, *H2* and *H3*) are supported by the test results. The effect of change readiness in SMEs on the realization of dynamic capability has a path coefficient value of 0.589 and  $p$ -value less than 0.001. These results are in accordance with our predictions, thereby supporting the first hypothesis (*H1*) of the study. This result, consistent with the findings of Uluskan *et al.* (2018), demonstrates that the higher level of change readiness possessed by SMEs players, the more they may contribute to the growth of their dynamic capabilities. In other words, the dynamic capability of SMEs is determined by their level of change readiness. SMEs with a high level of change readiness will provide capabilities such as adaptability, learning, networking, integration and coordination to attain dynamic capability. Dynamic capability is established when an organization is always ready to adapt to changes in strategy, execution and ongoing development to gain a competitive edge. According to Khuhro *et al.* (2019), to achieve organizational change, strategic decision-making and rapid efforts to deal with various types of change and solutions can increase competitive advantage. Therefore, when

Hypothesis	Path coefficients	$\rho$ -value	Result
<i>H1</i> : CR → DC	0.529	< 0.001	Supported
<i>H2</i> : AL → DC	0.324	< 0.001	Supported
<i>H3</i> : DC → DE	0.589	< 0.001	Supported

**Notes:** CR: change readiness, AL: agile leadership, DC: dynamic capability and DE: effectiveness of digital ecosystem

**Source:** WrapPLS output

**Table 5.**  
Hypotheses test

---

SMEs can respond to changes, they can gain a competitive advantage by being more dynamic in making decisions in a dynamic business environment.

The second hypothesis examines the effect of agile leadership on dynamic capability (path coefficient = 0.324 and  $p$ -value < 0.001). The results of this analysis are in accordance with our predictions and consistent with the findings of [Denning \(2018\)](#) and [Marques \(2018\)](#). [Christofi et al. \(2013\)](#) demonstrated that agility offers a more effective way to manage uncertainty and changes in the micro-macro environment. Strategic agility, for example, focuses on maximizing a company's future strategic direction to quickly adapt to market changes ([Sanchez, 1995](#)), which can boost an organization's competitive advantage. This indicates that agile leadership may improve firms' dynamic ability to deal with several kinds of changes. SMEs with agile leadership are characterized by the ability to nurture and collaborate, accept diversity, innovate and compete, discover new methods and processes for performance enhancement, rapidly update hardware and infrastructure and implement appropriate and timely software and programs, all of which have proven to contribute to the growth of the organization's dynamic capabilities.

The third hypothesis posits that SMEs with dynamic capabilities can create digital ecosystems (path coefficient = 0.589 and  $p$ -value < 0.001). The ability to achieve diverse solutions under uncertainty can lead to a digital-based ecosystem gaining a competitive advantage and surviving in today's digital era. To boost organizational revenues, SMEs should use a variety of digital tools to implement operational and marketing initiatives. This can achieve maximum benefits owing to their dynamic capabilities. [Gierlich et al. \(2019\)](#) argued that SMEs' ecosystems may be more digitalized to establish a survival strategy for SMEs. A digital ecosystem can certainly be fully used with the support of dynamic capabilities that can aid in the coordination of suppliers, stakeholders and customers. According to [Park et al. \(2018\)](#), dynamic capability is defined as the ability to observe market conditions, technology and regulation which then have an impact on company performance in driving the digital business ecosystem ([Rialti et al., 2019](#); [Fachrunnisa, 2016](#); [Fachrunnisa and Hussain, 2013](#)). Therefore, this study highlights the importance of increasing SMEs' dynamic capability to achieve the effectiveness of the digital ecosystem.

## 6. Conclusion

According to the findings of this study, the effectiveness of efforts to implement a digital ecosystem for SMEs is defined by the degree to which their dynamic capability level has been achieved. High levels of change readiness and the availability of agile leadership can help SMEs develop their dynamic capabilities. The digital ecosystem is necessary for the development of SMEs to compete in the global market in today's digital era. SMEs also require agile leadership to meet the needs of the digital ecosystem. Furthermore, SMEs must be adaptable to realize their dynamic capabilities in all business periods. Finally, this study demonstrates the role of dynamic capability in the effectiveness of digital ecosystems for SMEs. The better prepared SMEs are for change, the more they will be able to expand their dynamic capabilities. Leadership agility can also be used as a dynamic capability lever.

### 6.1 Theoretical contribution

The results of this study contribute to the theoretical development of the digital ecosystem for SMEs and can be used as a reference for future research. The first objective of this study was to examine the impact of SMEs players' level of change readiness on their dynamic capability. These findings are supported by those of previous studies

---

(Uluskan *et al.*, 2018; Hemme *et al.*, 2018; Vakola, 2014), which suggest that change readiness affects an organization's engagement and dynamic capability. The second objective was to examine the effect of agile leadership on the dynamic capabilities of SMEs players. The results of this study verify that change readiness and agile leadership are prerequisites for the growth of dynamic capabilities to create a digital ecosystem for SMEs. The existence of agile leadership can be an antecedent to the realization of a digital ecosystem for SMEs.

### *6.2 Managerial implications*

The results of this study have managerial implications for improving the effectiveness of the digital ecosystem for SMEs. All change readiness and agile leadership variables affect dynamic capability and dynamic capability variables affect the digital ecosystem. This implies that Indonesian SMEs in the creative industry should be able to understand and establish a digital ecosystem. Efforts to improve the effectiveness of the digital ecosystem can be realized by fostering the dynamic capabilities of SMEs. All SME employees and stakeholders must increase their change readiness to contribute to the organizational dynamic capability. Routine activities to improve agile leadership skills are also needed to achieve successful dynamic capability. The primary implication of this finding is the necessity for a policy to manage digital technology that encourages the creation of a digital ecosystem for SMEs by enhancing their dynamic capability. Several policies to support digital technology management can be applied to improve the effectiveness of digital ecosystems for SMEs, including internal policies for each SME, such as creating standard operating procedures for digital technology development; external policies in the SMEs community, such as regulations regarding the application of digital technology, which will allow SMEs to support one another in using digital technology; external stakeholders' policies for the use of digital technology in SME operations, as well as the development of digital HR competitiveness for SME employees; and agreement to use digital technology hardware through the SMEs association.

### *6.3 Limitations and future research*

Although this study has some positive outcomes for SMEs, it also has some limitations. First, because the study design is cross-sectional, it may not be able to confirm that the hypotheses establish a causal relationship; nevertheless, the results tend to be consistent with theoretical reasoning. Future research should provide an alternative solution to this problem by applying a longitudinal design. Second, this study analyzes different aspects of dynamic capabilities, such as sensing, innovating, integrating and coordinating capabilities. However, a more focused approach may be required to fully leverage each process and achieve an effective digital ecosystem.

Agile leadership is the most appropriate leadership to adopt when SMEs require innovation and experimentation to deal with the dynamic scenarios of changing business environments. Other leadership styles may be more appropriate in stable situations, given that all organizations, including SMEs, strive for stability. Future studies may attempt to examine different styles of leadership in different environments and times. Third, this study focuses solely on the direct impact of SMEs' change readiness and agile leadership on their dynamic capability before examining the direct impact of dynamic capability on the realization of the digital ecosystem. To establish an effective digital ecosystem, more research is required to determine the extent of SMEs' dynamic capability to mediate change readiness and agile leadership. Fourth, this research relies

on self-report data, which is likely to have general method variance. Although our findings demonstrate that common method variance is not a problem, future research is expected to provide additional contributions and use a more objective method to measure the effectiveness of SMEs digital ecosystem. Furthermore, for future research, it is possible to develop a digital ecosystem by considering knowledge management capabilities that might help SMEs become more dynamic.

---

## References

- Al-Balushi, S., Sohal, A.S., Singh, P.J., Al Hajri, A., Al Farsi, Y.M. and Al Abri, R. (2014), "Readiness factors for lean implementation in healthcare settings: a literature review", *Journal of Health Organization and Management*, Vol. 28 No. 2, pp. 135-153, doi: [10.1108/JHOM-04-2013-0083](https://doi.org/10.1108/JHOM-04-2013-0083).
- Andreeva, T. and Chaika, V. (2006), "Dynamic capabilities: what they need to be dynamic?", *Victoria*, Vol. 10, p. 30.
- Ansari, R., Barati, A. and Sharabiani, A.A.A. (2016), "The role of dynamic capability in intellectual capital and innovative performance", *International Journal of Innovation and Learning*, Vol. 20 No. 1, pp. 47-67, doi: [10.1504/IJIL.2016.076671](https://doi.org/10.1504/IJIL.2016.076671).
- Antony, J. (2014), "Readiness factors for the lean six sigma journey in the higher education sector", *International Journal of Productivity and Performance Management*, Vol. 63 No. 2, pp. 257-264, doi: [10.1108/IJPPM-04-2013-0077](https://doi.org/10.1108/IJPPM-04-2013-0077).
- Armenakis, A.A., Harris, S. and Mossholder, K. (2007), "Creating readiness for organizational change", *Human Relations*, Vol. 46 No. 6, pp. 681-703.
- Balocco, R., Ciappini, A. and Corso, M. (2012), "The impact of ICT sourcing on ICT organisation, competences and continuous innovation", *International Journal of Technology Management*, Vol. 60 Nos 3/4, pp. 179-201, doi: [10.1504/IJTM.2012.049440](https://doi.org/10.1504/IJTM.2012.049440).
- Bamel, U.K. and Bamel, N. (2018), "Organizational resources, KM process capability and strategic flexibility: a dynamic resource-capability perspective", *Journal of Knowledge Management*, Vol. 22 No. 7, pp. 1555-1572, doi: [10.1108/JKM-10-2017-0460](https://doi.org/10.1108/JKM-10-2017-0460).
- Barclay, D., Higgins, C. and Thompson, R. (1995), "The partial least squares (PLS) approach to causal modeling: personal computer adoption and use as an illustration", *Technol. Stud.*, Vol. 2, pp. 285-309, doi: [10.1108/JKM-10-2017-0460](https://doi.org/10.1108/JKM-10-2017-0460).
- Başkarada, S. and Koronios, A. (2018), "The 5S organizational agility framework: a dynamic capabilities perspective", *International Journal of Organizational Analysis*, Vol. 26 No. 2, pp. 331-342, doi: [10.1108/IJOA-05-2017-1163](https://doi.org/10.1108/IJOA-05-2017-1163).
- BPS (Badan Pusat Statistik/Indonesia Central Agency on Statistics) (2017), *Survei Industri Kecil Tahunan: profil Industri Mikro Dan Kecil*, available at: [www.bps.go.id](http://www.bps.go.id) Annual Small Industry Survey: Micro and Small Industry Profile.
- Bruns, H.J. (2014), "HR development in local government: how and why does HR strategy matter in organizational change and development?", *Business Research*, Vol. 7 No. 1, pp. 1-49, doi: [10.1007/s40685-014-0002-z](https://doi.org/10.1007/s40685-014-0002-z).
- Budhiraja, S. (2019), "Organizational readiness for change: an inherent concern for Indian small and medium enterprises (SMEs)", *Development and Learning in Organizations: An International Journal*, Vol. 33 No. 2, pp. 4-7, doi: [10.1108/DLO-09-2018-0118](https://doi.org/10.1108/DLO-09-2018-0118).
- Buhler, P. (2010), "The agile manager", supervision: the journal of industrial relation and operating management", Vol. 71 No. 12, pp. 18-21.
- Chênevert, D., Kilroy, S. and Bosak, J. (2019), "The role of change readiness and colleague support in the role stressors and withdrawal behaviors relationship among health care employees", *Journal of Organizational Change Management*, Vol. 32 No. 2, doi: [10.1108/JOCM-06-2018-0148](https://doi.org/10.1108/JOCM-06-2018-0148).

- 
- Chin, W., Marcolin, B.L. and Newsted, P.R. (2003), "A partial least squares latent variable modeling approach for measuring interaction effects: results from a monte Carlo simulation study and an electronic-mail emotion/adoption study", *Information Systems Research*, Vol. 14 No. 2, pp. 189-217.
- Christofi, M., Kaufmann, H.R., Vrontis, D. and Leonidou, E. (2013), "Cause-related marketing and strategic agility: an integrated framework for gaining the competitive advantage", world review of entrepreneurship", *Management and Sustainable Development*, Vol. 9 No. 4, pp. 518-542, doi: [10.1504/WREMSD.2013.056758](https://doi.org/10.1504/WREMSD.2013.056758).
- Denning, S. (2018), "The role of the C-suite in agile transformation: the case of amazon", *Strategy and Leadership*, Vol. 46 No. 6, pp. 14-21, doi: [10.1108/SL-10-2018-0094](https://doi.org/10.1108/SL-10-2018-0094).
- Desai, D. (2013), "The competitive advantage of adaptive networks: an extension of the dynamic capability view", *International Journal of Business Environment*, Vol. 5 No. 4, pp. 379-397, doi: [10.1504/ijbe.2013.052086](https://doi.org/10.1504/ijbe.2013.052086).
- Diamantopoulos, A., Riefler, P. and Roth, K. (2005), "The problem of measurement model misspecification in behavioral and organizational research and some recommended solutions", *Journal of Applied Psychology*, Vol. 90, pp. 710-730.
- Dikert, K., Paasivaara, M. and Lassenius, C. (2016), "Challenges and success factors for large-scale agile transformations: a systematic literature review", *Journal of Systems and Software*, Vol. 119, pp. 87-108, doi: [10.1016/j.jss.2016.06.013](https://doi.org/10.1016/j.jss.2016.06.013).
- Dini, P., Lombardo, G., Mansell, R., Razavi, A.R., Moschoyiannis, S., Krause, P., Nicolai, A. and León, L.R. (2008), "Beyond interoperability to digital ecosystems: regional innovation and socio-economic development led by SMEs", *International Journal of Technological Learning, Innovation and Development*, Vol. 1 No. 3, pp. 410-426, doi: [10.1504/IJTLID.2008.019981](https://doi.org/10.1504/IJTLID.2008.019981).
- Eisenhardt, K.M. and Martin, J.A. (2000), "Dynamic capabilities: what are they?", *Strategic Management Journal*, Vol. 21 Nos 10/11, pp. 1105-1121.
- Fachrunnisa, O. (2016), "Towards sustainability of virtual business community through trustworthy behaviour-based mechanism", *International Journal of Web Based Communities*, Vol. 12 No. 3, pp. 296-322, doi: [10.1504/IJWBC.2016.077756](https://doi.org/10.1504/IJWBC.2016.077756).
- Fachrunnisa, O. and Hussain, F.K. (2013), "A methodology for maintaining trust in industrial digital ecosystems", *IEEE Transactions on Industrial Electronics*, Vol. 60 No. 3, pp. 1042-1058, doi: [10.1109/TIE.2011.2173890](https://doi.org/10.1109/TIE.2011.2173890).
- Filippini, R., Güttel, W.H. and Nosella, A. (2012), "Dynamic capabilities and the evolution of knowledge management projects in SMEs", *International Journal of Technology Management*, Vol. 60 Nos 3/4, pp. 202-220, doi: [10.1504/IJTM.2012.049431](https://doi.org/10.1504/IJTM.2012.049431).
- Fornell, C. and Larcker, D.F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50, doi: [10.2307/3151312](https://doi.org/10.2307/3151312).
- Gardner, W., Avolio, B. and Walumbwa, F. (2005), *Authentic Leadership Theory and Practice*, Elsevier Science.
- Gaur, A.S., Kumar, V. and Singh, D. (2014), "Institutions, resources, and internationalization of emerging economy firms", *Journal of World Business*, Vol. 49 No. 1, pp. 12-20.
- Gierlich, M., Schüritz, R., Volkwein, M. and Hess, T. (2019), "SMEs' approaches for digitalization in platform ecosystems", *Twenty-Third Pacific Asia Conference on Information Systems*, pp. 1-14.
- Gnizy, I., Baker, W.E. and Grinstein, A. (2014), "Proactive learning culture: a dynamic capability and key success factor for SMEs entering foreign markets", *International Marketing Review*, Vol. 31 No. 5, pp. 477-505, doi: [10.1108/IMR-10-2013-0246](https://doi.org/10.1108/IMR-10-2013-0246).
- Ghozali, I. (2014), *Structural Equation Modeling: An Alternative Method With Partial Least Squares (PLS)*, Undip Press, Semarang.

- 
- Hair, J.F., Hult, G.T.M., Ringle, C.M. and Sarstedt, M. (2017), *A Primer on Partial Least Squares Structural Equation Modeling PLS-SEM*, 2nd ed., SAGE Publication, available at: <http://lccn.loc.gov/2016005380>
- Hapsari, N.R. and Setiawan, A.H. (2019), "Analisis orientasi kewirausahaan terhadap kinerja usaha industri kreatif bidang kerajinan di kota semarang", *Diponegoro Journal of Economics*, Vol. 1 No. 1, pp. 47-54.
- Harman, H.H. (1960), "Modern factor analysis", University of Chicago Press, available at: <https://archive.org/details/ModernFactorAnalysis/page/n17/mode/2up>
- Hemme, F., Bowers, M.T. and Todd, J.S. (2018), "Change readiness as fluid trajectories: a longitudinal multiple-case study", *Journal of Organizational Change Management*, Vol. 31 No. 5, pp. 1153-1175, doi: [10.1108/JOCM-07-2017-0284](https://doi.org/10.1108/JOCM-07-2017-0284).
- Hernández-Linares, R., Kellermanns, F.W. and López-Fernández, M.C. (2021), "Dynamic capabilities and SME performance: the moderating effect of market orientation", *Journal of Small Business Management*, Vol. 59 No. 1, pp. 162-195, doi: [10.1111/jsbm.12474](https://doi.org/10.1111/jsbm.12474).
- Khuhro, A.S., Khuhro, R.A. and Irfan, M. (2019), "Readiness for organizational change through dynamic capabilities and routinization: a study of three industrial estates", *International Transaction Journal of Engineering, Management, and Applied Sciences and Technologies*, Vol. 10 No. 11, pp. 1-13.
- Kock, N. (2015), "WrapPLS 5.0 user manual", *ScriptWarpp System*, TX, Laredo.
- Kock, N. and Moqbel, M. (2021), "Social networking site use, positive emotions, and job performance", *Journal of Computer Information Systems*, Vol. 61 No. 2, pp. 163-173, doi: [10.1080/08874417.2019.1571457](https://doi.org/10.1080/08874417.2019.1571457).
- Kraus, S., Palmer, C., Kailer, N., Kallinger, F.L. and Spitzer, J. (2019), "Digital entrepreneurship: a research agenda on new business models for the twenty-first century", *International Journal of Entrepreneurial behaviour and Research*, Vol. 25 No. 2, pp. 353-375, doi: [10.1108/IJEBR-06-2018-0425](https://doi.org/10.1108/IJEBR-06-2018-0425).
- Kutsikos, K., Konstantopoulos, N., Sakas, D. and Verginadis, Y. (2014), "Developing and managing digital service ecosystems: a service science viewpoint", *Journal of Systems and Information Technology*, Vol. 16 No. 3, pp. 233-248, doi: [10.1108/JSIT-02-2014-0015](https://doi.org/10.1108/JSIT-02-2014-0015)
- Liu, W., Sun, L., Li, W. and Zhang, H. (2018), "How does dynamic capability affect logistics service integrator's growth performance", *International Journal of Services Technology and Management*, Vol. 24 Nos 1/2/3, pp. 151-172, doi: [10.1504/IJSTM.2018.090347](https://doi.org/10.1504/IJSTM.2018.090347).
- McKenzie, J. and Aitken, P. (2012), "Learning to lead the knowledgeable organization: developing leadership agility", *Strategic HR Review*, Vol. 11 No. 6, pp. 329-334, doi: [10.1108/14754391211264794](https://doi.org/10.1108/14754391211264794).
- McPherson, B. (2016), "Agile, adaptive leaders", *Human Resource Management International Digest*, Vol. 24 No. 2, pp. 1-3, doi: [10.1108/HRMID-11-2015-0171](https://doi.org/10.1108/HRMID-11-2015-0171).
- Marques, J. (2018), "What's new in leadership?", *Human Resource Management International Digest*, Vol. 26 No. 4, pp. 15-18, doi: [10.1108/HRMID-04-2018-0078](https://doi.org/10.1108/HRMID-04-2018-0078)
- Martin, F. (2009), "The digital ecosystem related with the development of SMEs", *16th International Economic Conference - IECS 2009*, May, pp. 129-132.
- Matopoulos, A., Herdon, M., Várallyai, L., Péntek, Á (2012), "Digital business ecosystem prototyping for SMEs", *Journal of Systems and Information Technology*, Vol. 14 No. 4, pp. 286-301, doi: [10.1108/13287261211279026](https://doi.org/10.1108/13287261211279026).
- Mauludin, H., Alhabsji, T., Idrus, S. and Arifin, Z. (2013), "Market orientation, learning organization and dynamic capability as antecedents of value creation", *IOSR Journal of Business and Management*, Vol. 10 No. 2, pp. 38-48, doi: [10.9790/487x-1023848](https://doi.org/10.9790/487x-1023848).
- Oliva, F.L., Couto, M.H.G., Santos, R.F. and Bresciani, S. (2018), "The integration between knowledge management and dynamic capabilities in agile organizations", *Management Decision*, Vol. 57 No. 8, doi: [10.1108/MD-06-2018-0670](https://doi.org/10.1108/MD-06-2018-0670).



- 
- Oreg, S., Vakola, M. and Armenakis, A. (2011), "Change recipients' reactions to organizational change: a 60-year review of quantitative studies", *The Journal of Applied Behavioral Science*, Vol. 47 No. 4, pp. 462-524, doi: [10.1177/0021886310396550](https://doi.org/10.1177/0021886310396550).
- Park, H.Y., Misra, K., Reddy, S. and Jaber, K. (2018), "Family firms' innovation drivers and performance: a dynamic capabilities approach", *Journal of Family Business Management*, Vol. 9 No. 1, doi: [10.1108/JFBM-11-2017-0039](https://doi.org/10.1108/JFBM-11-2017-0039).
- Perker, D.W., Holesgrove, M. and Pathak, R. (2015), "Improving productivity with self-organised teams and agile leadership", *International Journal of Productivity and Performance Management*, Vol. 64 No. 1, pp. 112-128, doi: [10.1108/MRR-09-2015-0216](https://doi.org/10.1108/MRR-09-2015-0216).
- Podsakoff, P.M. and Organ, D.W. (1986), "Self-reports in organizational research: problems and prospects", *Journal of Management*, Vol. 12 No. 4, pp. 531-544, doi: [10.1177/014920638601200408](https://doi.org/10.1177/014920638601200408).
- Rehman, K.U. and Saeed, Z. (2018), "Impact of dynamic capabilities on firm performance: moderating role of organizational competencies", *Sukkur IBA Journal of Management and Business*, Vol. 2 No. 2, p. 20, doi: [10.30537/sijmb.v2i2.92](https://doi.org/10.30537/sijmb.v2i2.92).
- Rialti, R., Marzi, G., Ciappei, C. and Busso, D. (2019), "Big data and dynamic capabilities: a bibliometric analysis and systematic literature review capabilities", *Management Decision*, Vol. 57 No. 8, pp. 1091-1109, doi: [10.1108/MD-07-2018-0821](https://doi.org/10.1108/MD-07-2018-0821).
- Sanatigar, H., Peikani, M.H. and Gholamzadeh, D. (2017), "Identifying organizational agility and leadership dimensions using Delphi technique and factor analysis: an investigation among public sector pension funds (PSPFs) in Iran", *International Journal of Public Leadership*, Vol. 13 No. 4, pp. 276-294, doi: [10.1108/ijpl-01-2017-0005](https://doi.org/10.1108/ijpl-01-2017-0005).
- Sanchez, R. (1995), "Strategic flexibility in product competition", *Strategic Management Journal*, Vol. 16 No. S1, pp. 135-159.
- Schilke, O., Hu, S. and Helfat, C.E. (2018), "Quo Vadis dynamic capabilities? A content-analytic review of the current state of knowledge and recommendations for future research", *Academy of Management Annals*, Vol. 12 No. 1, pp. 390-439, doi: [10.5465/annals.2016.0014](https://doi.org/10.5465/annals.2016.0014).
- Sugiardi, S., Jamhari, J., Hartono, S. and Waluyati, L.R. (2021), "Factors affecting the performance of the traditional fisheries fishing effort in the regency of kubu Raya, west Borneo", *Journal of Science and Technology Policy Management*, Vol. 12 No. 1, pp. 5-23, doi: [10.1108/JSTPM-07-2018-0077](https://doi.org/10.1108/JSTPM-07-2018-0077).
- Sussan, F. and Acs, Z.J. (2017), "The digital entrepreneurial ecosystem", *Small Business Economics*, Vol. 49 No. 1, pp. 55-73, doi: [10.1007/s11187-017-9867-5](https://doi.org/10.1007/s11187-017-9867-5).
- Tallott, M. and Hilliard, R. (2016), "Developing dynamic capabilities for learning and internationalization: a case study of diversification in an SME", *Baltic Journal of Management*, Vol. 11 No. 3, pp. 328-347.
- Teece, D. (2018), "Business models and dynamic capabilities", *Long Range Planning*, Vol. 51 No. 1, pp. 40-49.
- Tenenhaus, M., Vinzi, V., Chatelin, Y.-M. and Lauro, C. (2005), "PLS path modeling", *Computational Statistics and Data Analysis*, Vol. 48 No. 1, pp. 159-205.
- The McKinsey Quarterly (2008), "McKinsey quarterly survey on organizational transformation", doi: [10.1002/9781119176626.ch11](https://doi.org/10.1002/9781119176626.ch11)
- Uluskan, M., McCreery, J.K. and Rothenberg, L. (2018), "Impact of quality management practices on change readiness due to new quality implementations", *International Journal of Lean Six Sigma*, Vol. 9 No. 3, pp. 351-373, doi: [10.1108/IJLSS-05-2017-0049](https://doi.org/10.1108/IJLSS-05-2017-0049).
- Vakola, M. (2014), "What's in there for me? Individual readiness to change and the perceived impact of organizational change", *Leadership and Organization Development Journal*, Vol. 35 No. 3, pp. 195-209, doi: [10.1108/LODJ-05-2012-0064](https://doi.org/10.1108/LODJ-05-2012-0064).
- Weiner, B.J. (2009), "A theory of organizational readiness for change", *Implementation Science*, Vol. 4 No. 1, pp. 1-9, doi: [10.1186/1748-5908-4-67](https://doi.org/10.1186/1748-5908-4-67).

- 
- Wilden, R., Gudergan, S.P., Nielsen, B. and Lings, I. (2013), "Dynamic capabilities and performance: strategy, structure, and environment", *Long Range Planning*, Vol. 46 Nos 1/2, pp. 72-96, doi: [10.1016/j.lrp.2012.12.001](https://doi.org/10.1016/j.lrp.2012.12.001).
- World Bank Group. (2018), "World Bank Group Support for Small and Medium Enterprises A Synthesis of Evaluative Findings", available at: <https://ieg.worldbankgroup.org/evaluations/world-bank-group-support-small-and-medium-enterprises-smes> (accessed 18 October 2020).
- Wu, C. and Chen, T. (2018), "Linking shared leadership, organizational commitment, and creativity", *International Journal of Hospitality Management*, Vol. 74, pp. 75-84, doi: [10.1016/j.ijhm.2018.02.003](https://doi.org/10.1016/j.ijhm.2018.02.003).
- Yu, X., Meng, X. and Chen, Y. (2017), "Technological forecasting and social change work-family conflict, organizational ambidexterity and new venture legitimacy in emerging economies", *Technological Forecasting and Social Change*, pp. 1-12, doi: [10.1016/j.techfore.2017.10.003](https://doi.org/10.1016/j.techfore.2017.10.003).
- Zollo, M. and Winter, S. (2002), "Deliberate learning and the evolution of dynamic capabilities", *Organization Science*, Vol. 13 No. 3, pp. 339-351.

---

### Further reading

- Li, F. (2018), "The digital transformation of business models in the creative industries: a holistic framework and emerging trends", *Technovation*, December, Vol. 92-93, pp. 1-10, doi: [10.1016/j.technovation.2017.12.004](https://doi.org/10.1016/j.technovation.2017.12.004).

Appendix 1

Coefficients	RC	AL	DC	DS
Skewness	-0.523	-0.920	-0.311	-0.575
Kurtosis	-0.361	1.525	-0.209	-0.148

Source: WrapPLS output

**Table A1.**  
Normality test

Appendix 2

Index	Value	Interpretation
APC (average path coefficient)	0.373	$\rho$ -value 0.001
ARS (average $R^2$ )	0.475	$\rho$ -value 0.001
AARS (average adjusted $R^2$ )	0.471	$\rho$ -value 0.001
AVIF (average block VIF)	1.430	Acceptable if $\leq 5$ , Ideally $\leq 3.3$
AFVIF (average full collinearity VIF)	2.99	Acceptable if $\leq 5$ , Ideally $\leq 3.3$
Tenenhaus GoF (GoF)	0.560	Small $\geq 0.1$ , medium $\geq 0.25$ , large $\geq 0.36$

Source: WrapPLS output

**Table A2.**  
Model fit test

**Corresponding author**

Ardian Adhiatma can be contacted at: [ardian@unissula.ac.id](mailto:ardian@unissula.ac.id)

For instructions on how to order reprints of this article, please visit our website:

[www.emeraldgrouppublishing.com/licensing/reprints.htm](http://www.emeraldgrouppublishing.com/licensing/reprints.htm)

Or contact us for further details: [permissions@emeraldinsight.com](mailto:permissions@emeraldinsight.com)