

## Digital leadership and organizational capabilities in manufacturing industry: A study in Malaysian context

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### ABSTRACT

The research is conducted to study the outcome of digital leadership on dynamic capabilities, innovation capabilities, and alliances capabilities in manufacturing industries within the Malaysian context. Today, developing corporations and industries, at the least, require a virtual transformation to have greater organizational abilities in shaping and growing their new and present commercial enterprise to healthy the brand-new generation paradigm. A cross-sectional quantitative method has been used in this study with a sample of 132 respondents with different industry back grounds. These respondents are organizations, which are based on the nature of a business role like authorized representative, distributor, importer, manufacturer, combination authorized representative, distributor and importer, and combination distributor and importer that located in Selangor, Malaysia. The research used the SMART PLS software to analyze and interpret the results. There main hypotheses are proposed and tested. The results showed that digital leadership positively affects dynamic capabilities, innovation capabilities, and alliances capabilities.

**Keywords:** Digital leadership, Organization capabilities, Alliance capabilities, Dynamic capabilities, Innovation capabilities, Malaysia

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## 1. Introduction

Today, in the developing international market, Industry 4.0 is exceedingly ruled through by the role of digital technology, which have pushed the change of concept in the business practice, as well as in business models of organizations. The impact of Industry 4.0 can be seen as the market today is dominated by some big market players who own such platform. The advancement of Industry 4.0 is not as it appeared that had positive impacts, but also it caused the born of digital leadership [1]. The capabilities of digital leadership can be cultivated when the leader is situated towards digitalization. Hence, the brief charge relating to the exertion to pick up the competitive advantage in an organization is to extend the innovation capability. Digital technology is progressively being utilized in different businesses for driving changes in their organization that allows effect on two angles: (1) in terms of process and organization on how they emphatically influence costs; expanding the competitiveness as well as the opportunity for modern trade; (2) its impact on revenue enhancement; since digital technology involved in a global level [2]. Hence, numerous organizations tend to create an intensive knowledge on processes of their business to speed up decision-making, adequacy, adaptability, mechanization as well as its savvy digitization [3].

Referring to Tidd & Bessant [4], innovation capabilities consist of a wide scope of developments such as product, process, position and paradigm innovation. Innovation that relies closely on the core competence of an organization, and abilities that allow broadening distinct product functionality is actually product innovation. In another view, dynamic capability is known as a firm's ability to modify and alter its expertise in line with environmental demand, and to frequently reshape the assets to invent a competitive product [5]. A special capability of the organization requires building up an alliance in the history of management to strengthen participants' position, which is known as alliance capabilities [6]. Alliance is a root of competitive advantage. Moreover, this study investigates the impact of digital leadership on organizational capabilities (alliance capabilities, dynamic capabilities, and innovation capabilities) in manufacturing industries in Malaysia.

The presence of Industry 4.0 in Malaysia caused that the manufacturing industry has changed dramatically, especially on the operation side. Nevertheless, the industry is responding to in a passive way in conquering the chances of digital technology to sustain itself in the market. For example, Kodak and Polaroid tell the tale of how, when facing the threat of digitalization, a market leader will instantly lose its position, if management is unable to adapt to the new challenges. The firm lacks the momentum to adjust to the dynamic environment, and digital technology provides more resilience and options for new firms to set up new output, new demands, new preferences, and new markets, potentially disrupting existing businesses. It is a disruptive digital phenomenon that has been studied in Harvard Business Review that the firms tend to fail in maintaining the sustainable business due to the agility to adapt the change [7] in the digital era. Such transformation is required to makeover the existing capabilities to enhance it, and to become a new business model innovation via enforcing alliance capabilities, dynamic capabilities, and innovation capabilities. In a study done by Elidjena, Leonardus, Wasono Mihardjob, Riza, and Rukmana [2] the exposures of digital technology, such as the Internet of things (IoT), big data, and cloud, has allowed the organization to be connected virtually. However, referring to the problems faced by organizations as mentioned, the study on the relationship of digital leadership in alliance capabilities, dynamic capabilities & innovation capabilities has yet to be explored. Thus, the purpose of this research is to investigate the impact of digital leadership on organizational capabilities (alliance capabilities, dynamic capabilities, and innovation capabilities) in the manufacturing industry in Malaysia.

The past studies have not found a clear evidence of direct implications of digital leadership innovation capabilities, dynamic capabilities and alliances capabilities. Dynamic capability does have an indirect influence on operational performance based on some previous studies that have been carried out [8, 9], which is the gap that to be further explored in this research. The research found that the enlargement of dynamic abilities has a large variety of operational activities to guide improvement of business, innovation and alliance of an organization [10]. Dynamic capability is the key driver for the growth of innovation capabilities in terms of innovation's business model [11]. Yet, the research on dynamic capability pertaining to the digital leadership influence on dynamic capabilities is still lacking and has not been conducted splendidly. Moreover, the function of leadership becomes a crucial point in developing alliance capabilities [12].

Alliance capability is a special capability of the organization required to build up an alliance in the history of management in order to strengthen the position of participants [6], and it is a root of competitive advantage. However, there is a study which shows that alliance capability was not supporting the correlation with digital leadership [2]. Such results reveal the gap in earlier studies, whereby this study tries to fill this gap by exploring a relationship between digital leadership and organizational capabilities (alliance capabilities) in the Malaysian context.

According to the phenomenon of disruption, organizations with innovations are having an extra sustained competitive advantage [13]. Innovation capabilities represent the ability to create, expand or alter an existing resource base intentionally [14]. These capabilities are concerned with change and they promote the development of competitive advantage on the basis of their creative nature. Past researches, however, indicate no consensus, because such leadership is not fully accepting dynamic-capable innovation management [15]. Thus, the previous studies' lack will be further examined in this study examining an impact of digital leadership on organizational capabilities (innovation capabilities) within the on the in the Malaysian context.

Digital leadership plays an important role in driving changes in various industries, especially in manufacturing. It also shapes a new paradigm in the business process and supply chain that creates turbulence in the market. In conjunction with this scenario, innovation is realized as a remedy for organizational survival [16]. At the same time, alliance capability seems to have established itself as a vital point for the competitive strategy of many organizations. Notwithstanding this unprecedented increase in alliance activity, there is, however, an empirical evidence that alliance capability is still weak over the years [17]. Furthermore, in the digital era, dynamic capability plays an important role in driving the sustainable competitive advantage in adjusting to high-speed markets [11]. This capability, which is to be reconfigured, will change the paradigm of management firms, which is known as transformation. Hence, exploring the practical wisdom on the impact of digital leadership on organizational capabilities seems indispensable for organizational sustainable competitiveness, which will be further investigated in this study.

In order to get a concrete answer pertaining to the impact of digital leadership on organizational capabilities (innovation capabilities, dynamic capabilities and alliances capabilities), we will discuss questions as below:

- a) Does the impact of digital leadership on organizational capabilities in general have a positive and significant relationship within Malaysian context?
- b) Does the impact of digital leadership on innovation capability have a positive and significant relationship within Malaysian context?
- c) Does the impact of digital leadership on dynamic capabilities have a positive and significant relationship within Malaysian context?
- d) Does the impact of digital leadership on alliances capabilities have a positive and significant relationship within Malaysian context?

Where the family name may be ambiguous (e.g., a double name), please indicate this clearly. Present the authors' affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lower-case superscript letter immediately after the author's name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name and, if available, the e-mail address of each author.

## **2. Theoretical framework and hypotheses**

A theoretical framework pertaining to leadership behavioral complexity will be examined as well in this study. The long-term interest in the organization has been the effectiveness of managerial and executive leadership. [18]. The complexity of behavior refers to a leader's ability to participate in a wide variety of activities. This theory also indicates that it is possible that these paradoxes can be transcended by a chief. A leader is expected to do other work, such as anticipating consumers' changing needs, introducing new projects and activities, and encouraging people to participate in new behavioral habits, which will foster the need for change. At the same time, a leader is required to establish relationships by raising concerns about others' needs, facilitating engagement, and assisting others in their career growth.

A behaviorally complex leader should also be able to fulfil the organization's diverse and conflicting needs [19]. Digital leadership correlates with behavioral complexity. Moreover, transformational leader is focused on discovering and implementing innovative ideas [20], and is able to create, support and inspire people to have more engagement [21, 22]. Transactional leaders are individuals who focus on the efficacy as well as alignment of current capabilities that encourage new facilities.

As businesses face volatile, evolving markets, an adequate stock of resources and processes it is insufficient to maintain competitive advantage [6, 23]. The concept of dynamic capabilities seeks to recognize and clarify the competitive advantage of companies over time. Whereas in terms of the alliance, the ability of the organization to efficiently capture, share and disseminate alliance management know-how, which is associated with previous experience. For instance, recognizes partners or start-up partnerships as well as an alliance portfolio [15]. In

terms of innovation, leaders need to be confident and open to others' knowledge, ideas, and observations [21]. Leaders are encouraged to build a difference. It can be detrimental to simply pursue resources for themselves as it likely contributes to a short-term outlook rather than creating a sustainable competitive advantage.

### **2.1. Digital leadership**

Digital leadership is a blend of leadership skills consisting of innovative and disruptive leadership through digital attitudes, including digital awareness and experience [24]. Some scholars defined e-leadership, which is also known as digital leadership, as a process of a societal influence at which the changes are brought in terms of attitudes, feelings, thoughts, behavior and organization, backed by information technology [25]. The concept of digital leadership refers to leaders who primarily use technological intervention in their leadership work. Today, business leaders reflect a competitive degree of global focus, versatility, and one or more styles of approaches to leadership [26, 27]. Nowadays, global leaders often show their high level of competitiveness, adaptability and applying more than one style to approaches to portray quality leadership [28] by creating a diverse and digital strategy for engagement to encourage employees [16]. Zeike [16] in his study opine that digital leadership is the capability of corporate leaders to figure out and take the opportunity to develop their business and upgrade its value via the use of digital business technology. Zupancic et al. [29] argue that digital leadership is competent if digital architecture and tools are being utilized cohesively so that strategically allow and develop a new business design. Mihardjo et al. [30] suggest that strong digital management will introduce a systemic digital transformation, which will fill the entire business. Having all said, digital leadership is a style of an organization in order to come up with the growth of an organization's knowledge, which is done by optimizing the use of digital technology Sasmoko et al. [31]. It is a critical part that drives the transformation towards better digital capabilities of firms to generate value for the firm [32].

### **2.2. Organizational capability: Dynamic capabilities**

The organization's ability to adjust with interior and exterior shifts by reconstructing the current exercise, sources, goods, and services as a part of new capability is known as dynamic capability [33]. The dynamic capability study was about creating dynamic capability as the internal mechanism to learn how to build the latest platform by incorporating, redesigning, obtaining, and absolving capital [6]. Dynamic capability is an organizational willingness to learn and adapt in an organizational way. According to Salunke et al. [34], dynamic capability focuses on the resource expertise of developing, expanding, and altering a structure to comply with the changes well before the new transformation model is developed. The scope of dynamic capability should focus on developing adaptive capability [35] and building capabilities to strengthen the firm by aligning management capabilities with strategic capability [36, 37]. Teece et al. [23] view that dynamic capabilities represent how an enterprise first builds firm-specific capabilities and competencies in the changing market climate. These skills and competencies are closely linked to the company's business operation, market position, and growth direction. A strong dynamic capability represents a clear collection of expertise and skills required to tackle near-future market opportunities, as well as to build a viable business model [38]. Dynamic capabilities are challenging to build and create, and so once successful, rivals may find it difficult to imitate. They are part of the "signature" organizational processes generated by the specific history, investment, culture, experience, and problem-solving techniques of each company.

Digital leadership was found to have a positive impact on dynamic capability in previous studies by some researchers. Vague information and learning are part of the ability to handle independently, improving on the current knowledge in a new area [39]. Management skills for designing and refining business models will be a key element of a company's dynamic capabilities for seizing new opportunities in most cases [40]. In fact, managerial competencies have developed into the sub-field of dynamic management capabilities over the past decade [14], an important feature of which is the design and implementation of new business models. Hence, the study proposes the following hypothesis:

H1: Digital leadership has a positive and significant impact on dynamic capability in an organization.

### **2.3. Organizational capability: Innovation capabilities**

The last capability that is important in this research paper is innovation capability. Innovation capabilities are planning, implementing, organizing, and controlling innovation activities to effectively and effectively realize innovative ideas [41]- Innovation capability that consists of product, process, position and paradigm innovation [4, 5]. Product is the foundation that depends on company's competence and skills to develop distinct products. The process is an enabler to accelerate the growth and decision-making process through digitization, or any innovation process to improve its performance. Positioning is within the market, and adaptation to changes and new market demands includes circumstances such as moving from a premium segment to a low segment position. Paradigm is part of the innovation of the business model. Innovation can be a newly improved concept, a technique, or recombination of old ideas or anything that is seen as new or improved [42, 43]. Innovation is the main source of competitiveness and competitive advantage that gives a positive impact on a company's performance and survival [24]. Williams [44] points that innovation gives a business a competitive edge. By leveraging the strengths of the company, the competitive advantage that can be achieved is not a new concern. Hii and Neely [45] claim that by exploiting established resources and capacities, it is the "possibility to generate new ideas, identify new market opportunities and implement marketable innovations."

Innovation capabilities have also been found to have a significant and positive impact on digital leadership. Since the Schumpeterian [46-49] era till today, innovation is solely concerning the development of new goods or services; new technologies for the manufacturing process; new framework or organizational system; and new strategy or services for members of the company.' According to Calantone et al. [50], company's strategy for the implementation of innovation is typically intended to contribute to organizational productivity and the success of leaders [48, 49]. Thus, this leads to the following hypothesis:

H2: *Digital leadership has a positive and significant impact on Innovation capabilities in an organization.*

### **2.4. Organizational capability: Alliance capabilities**

Creating an alliance in the management's history includes the organization's unique capacity to collaborate with other partners in order to improve the participants' position known as alliance capabilities [6]. Alliance capability is characterized by a company's ability to effectively capture, share and disseminate the know-how associated with previous experience in alliance management [51]. It also shows the extent a company can assure that the respective information are incorporated to its action and specific routines [52]. Research done by Simonin [53] advocates that alliance capability could enhance the company's ability to find a new partner, initiate or redesign its relationship, and its alliance portfolio. Via alliances, the respective company will also acquire the know-how of an organization and learn how to create a who-why [54]. Ireland et al. [55] believe that alliance capability is a competitive advantage that builds up from different types, such as selecting the right partners and building social capital and relationships based on trust. Alliance capability can accelerate a company's process and minimize the competitor gap because the entrances of a new firm tend to be a threat, or the competitor using a new disruptive model, and causes incumbents to react quickly.

In this context, leadership is a significant and positive influence in maintaining the firmness of alliance capabilities, which is also applicable in the digital era. The alliance team leader faces specific challenges as the company often designs alliances to have a common leadership role, informal leadership mechanisms that can evolve in several alliance teams and face numerous contingencies in each of them. Therefore, the aspects of the alliance team, such as the relationship between partners, the strategic background, contractual arrangements, and the characteristics of members of the team, are different and enable the leader to apply a variety of leadership

skills. According to Antonakis et al. [25], a full-range leadership theory mentioned that the leadership is the most implicit if the leader shows different behavior depending on the situation and the task they faced at that respective time. Kale et al. [51], described alliance capability as the firm's potential to constructively seize, share and circulate the alliance management know-how, related with foregoing experience. Central to this definition is the idea that companies need to gather and spread alliance knowledge through alliance experience. These findings lead to the formulation of the following hypothesis:

*H3: Digital leadership has a positive and significant impact on alliance capabilities in an organization.*

The figure 1 depicts the hypotheses framework, where digital leadership effectively influences alliance capability, dynamic capability, and innovation capability.

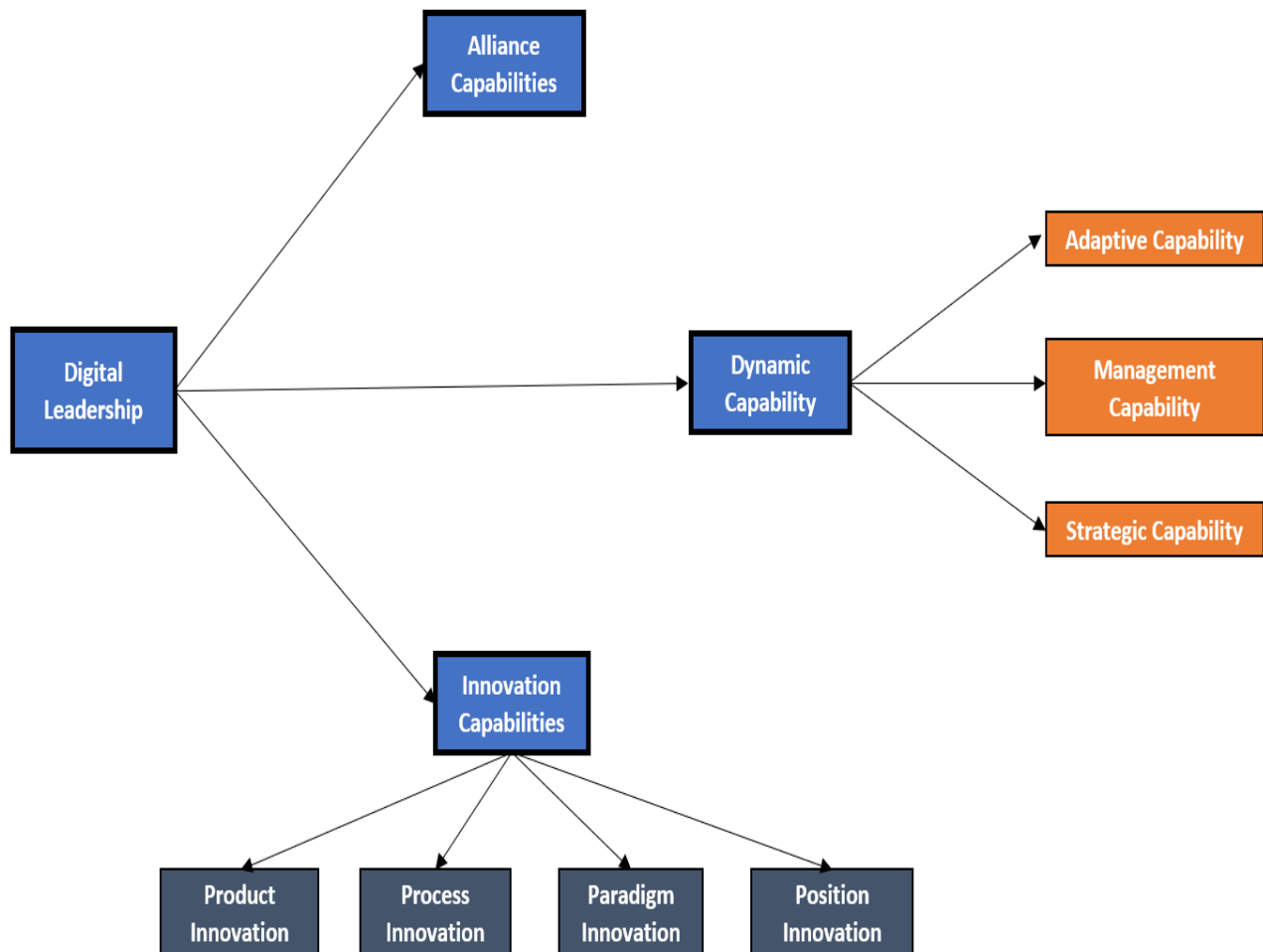


Figure 1. Conceptual framework

### 3. Research methodology

#### 3.1. Research design and philosophy

The research onion is to explain the methodology of this study with the research onion framework [56]. The outmost layer is research philosophy, and the philosophy taken for this research is a pragmatist one. The pragmatist view will be suitable for the current study [57]. According to Simpson [58], it seeks to account for lived experience and is part of social science history. Pragmatism argues that the most important determinant of the epistemology, ontology, and axiology of a study is the research question. This suggests that the research questions and objectives are the most important factors in research philosophy; one may be more appropriate than the other for answering particular questions.

### 3.2. Common method bias (CMB)

Common method bias will occur when there is a significant amount of shared false covariance among the variables due to the common method used for collecting data [59]. Variance Inflation Factors (VIFs) will be developed for all variables of latent with a value of less than 3.3, indicating collinearity. Thus, the model is examined as free of CMB if VIF's full collinearity test is  $\leq 3.3$ . The test revealed that a single factor solution only explained 36.469% of the total variance, which is notably below the threshold value of 50%, shows that CMB is not a crucial issue in this research.

### 3.3. Reflective measurement model

The reflective Measurement Model is the first and foremost step that examining the indicator of loadings. In this study, the range obtained is from 0.640 to 0.900, that more than the limit, 0.600 [60, 61]. The value in the range of 0.640 to 0.900 is portraying a strong reliability connection with the items. In this study, items with above 0.630 is recommended as it explains that the constructs above 50% of the indicator's variance is an acceptable item of reliability.

#### 3.3.1. Loadings, reliability and validity

Validity and reliability are measured in this research paper. Validity and reliability are measured in this research paper. Cronbach alpha, a measure of internal consistency reliability of the data. A value of more than 0.700 are desirable for exploratory research, and values below 0.600 indicate a lack of reliability [62]. Meanwhile, composite reliability with a minimum threshold of 0.600 to 0.700 is acceptable for an exploratory study, according to Joseph F. Hair., [60]. The average variance extracted (AVE), is a degree to which each dimension of latent variable that forms a construct converge in contrast to dimensions measured in different constructs, the threshold value of  $AVE > 0.500$  [63]. The results are shown as below:

Table 1. Loadings, reliability and validity

Construct	Items	Loadings	Composite Reliability	Average Variance Extracted (AVE)	Cronbach's Alpha
Digital Leadership	DL1	0.761	0.96	0.502	0.957
	DL2	0.723			
	DL3	0.666			
	DL4	0.684			
	DL8	0.640			
	DL11	0.751			
	DL12	0.713			
	DL13	0.686			
	DL14	0.696			
	DL15	0.694			
	DL16	0.758			
	DL20	0.709			
	DL21	0.704			
	DL22	0.721			
	DL23	0.737			
	DL24	0.787			
	DL32	0.640			
	DL36	0.635			
	DL38	0.724			
DL39	0.712				

Construct	Items	Loadings	Composite Reliability	Average Variance Extracted (AVE)	Cronbach's Alpha
	DL40	0.745			
	DL41	0.702			
	DL42	0.699			
	DL43	0.700			
Dynamic Capability	DC1	0.826	0.876	0.503	0.84
	DC3	0.690			
	DC4	0.693			
	DC5	0.726			
	DC6	0.687			
	DC7	0.651			
	DC8	0.676			
Alliance Capability	AC1	0.864	0.918	0.556	0.9
	AC2	0.728			
	AC3	0.734			
	AC4	0.731			
	AC5	0.742			
	AC6	0.698			
	AC7	0.746			
	AC8	0.726			
	AC9	0.730			
Innovation Capability	IC1	0.790	0.9	0.565	0.869
	IC2	0.811			
	IC3	0.798			
	IC4	0.657			
	IC5	0.618			
	IC6	0.769			
	IC7	0.796			

### 3.3.2. Discriminant validity

Discriminant Validity is examined by Heterotrait-Monotrait (HTMT) with a value less than 0.900 [64]. The HTMT is the mean value of the item correlations across constructs relative to the (geometric) mean of the average correlations for the items measuring the same construct. Hence, discriminant validity is established (see Table 2).

Table 2. Heterotrait-Monotrait (HTMT)

Construct	Alliance Capability	Digital Leadership	Dynamic Capability	Innovation Capability
Alliance Capability				
Digital Leadership	<b>0.843</b>			
Dynamic Capability	0.566	<b>0.570</b>		
Innovation Capability	0.731	0.745	<b>0.579</b>	



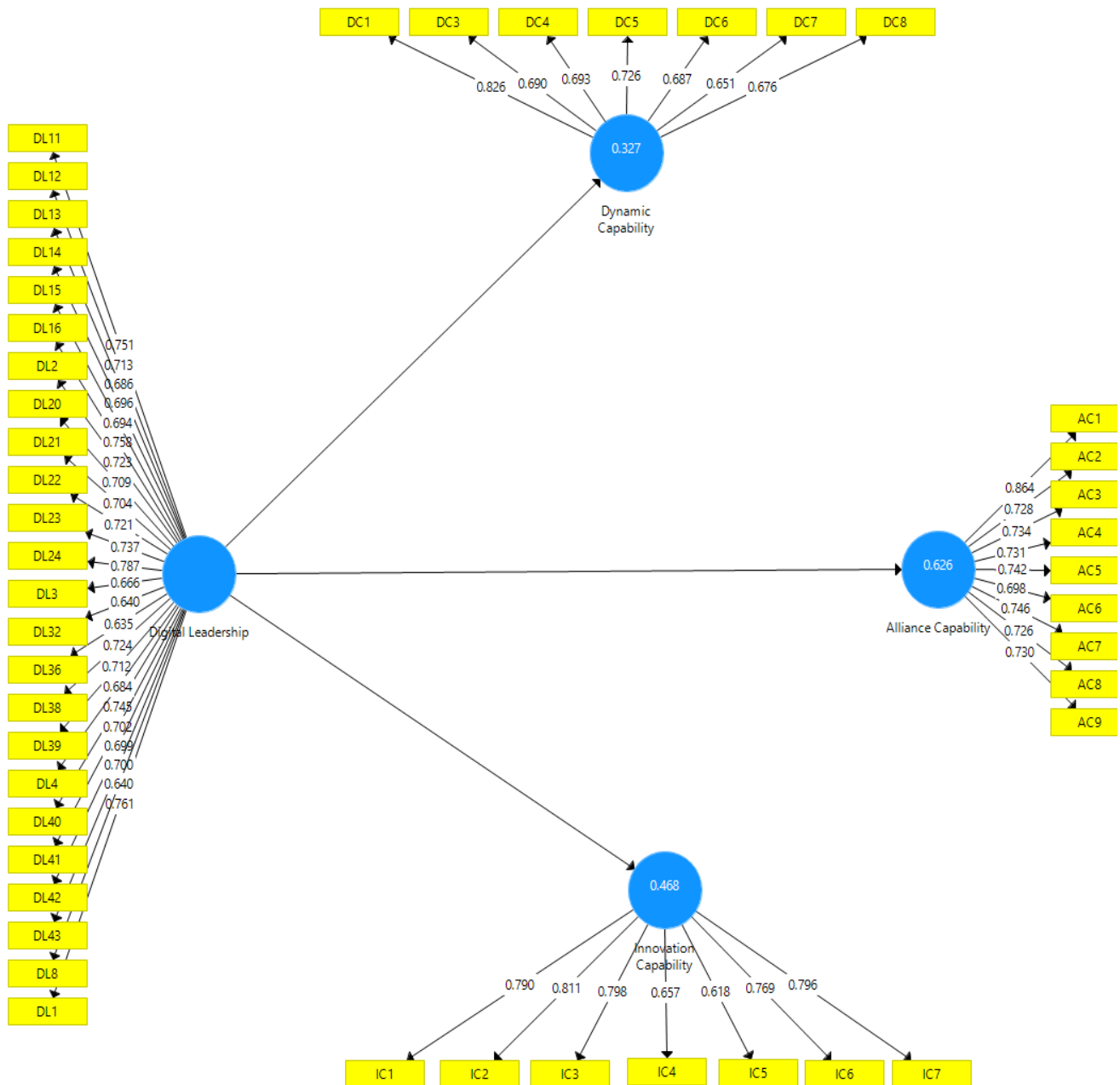


Figure 1: Measurement Model with Loadings, Reliability and Validity

### 3.4. Structural model

#### 3.4.1. R Square ( $R^2$ ), Q Square ( $Q^2$ ), and F Square ( $F^2$ )

The structural model exhibits the hypothesized in the study by assessing the  $R$  Square,  $Q$  Square and Significant path. The predictive capability is well-formed in this research as Table 3 shows that  $R^2$  values are exceeds 0.100. According to Falk & Miller [65], the appropriate value of  $R^2$  should be equal or more than 0.100. The strength of the structural path for the dependent variable is decided by  $R^2$  value, which shows the good quality of the respective model.

The result in Table 2 shows that the path model has significance in the prediction relevance of the constructs as the value  $Q^2$  is more than 0. Geisser [66] and Stone [67], in their research, mentioned that the purpose of  $Q^2$  in research is to assess predictive accuracy.

When a defined construct is isolated from the structural model,  $F^2$  tests the difference in the  $R^2$  value too. It is to determine whether the isolated construct has a structural effect on the structural model's  $R^2$  values. It shows that an exogenous construct has a strong impact on the selected endogenous construct, referring to Table 5.

### 3.4.2. Variance inflation factor (VIF)

The collinearity of the formative indicators is analyzed by VIF. As illustrated in Table 5, the value of VIF is 1.000, which can be interpreted as perfect conditions as the value is near to and lower to 3 should be ideal value [68].

## 3.5. Model fit

### 3.5.1. Goodness of fit (GoF)

Below are the fit measures being used to assess fit indices/measures in current research. According to Tenenhaus [69], there are three main aspects that need to be considered in research. First, small with a value less than 0.100. The second is medium, with a value in the range of 0.100 to 0.250. Lastly is large with a value of more than 0.300. As shown in Table 3, the value of GoF is more than 0.300. It can be concluded that the model is robust, which can be further continued for hypothesis testing purposes.

Table 3. R Square (R2), Q Square (Q2) and Goodness of Fit (GoF)

Constructs	Q <sup>2</sup> (=1-SSE/SSO)	R <sup>2</sup>	GoF
Alliance Capability	0.334	0.626	
Digital Leadership			0.305
Dynamic Capability	0.115	0.327	
Innovation Capability	0.256	0.468	

### 3.5.2. Standardized root mean square residual (SRMR)

The purpose of SRMR is to assess the model fit. The value of SRMR was 0.079, this was below the required value of 0.10, indicating acceptable model fit [60, 61]. (See Table 4).

Table 4. SRMR

Model	Original Sample (O)
Saturated Model	0.079
Estimated Model	0.081

### 3.5.3. RMS\_theta

The outer model residual for the formative measurement model is not relevant. Hence, the purpose of this tool in this research is to assess on the reflective model. The value is 0.119, this was the value below 0.120 indicate a well-fitting model.

## 3.6. Hypotheses

The path analysis shows the coefficients, standard errors and calculated t values for all constructs in the respective model. Hair et al., [60] suggest that the estimated statistical significance coefficient checks for hypothesized causal relationships (propositions) when the degree of significance is considered sufficient. With a maximum value of 1.0, the standardized beta ( $\beta$ ) coefficients have equal variances, hence approximating effect sizes. Cunningham [70] mentioned that near zero beta ( $\beta$ ) coefficients have little impact, although increasing  $\beta$

values are increasingly significant for each causal relationship. This model of path that is validated via bootstrapping and computes rapidly throughout 132 samples of data, has an excellent fit.

The result proved that Digital Leadership has a significant effect on Dynamic Capability, is the result obtained upon testing the H1 hypothesis ( $\beta = 0.572$ ,  $t = 8.806$ ,  $p < 0.001$ ). Hence, H1 was supported. After examining H2 hypothesis, it resulted that Digital Leadership has significant result on Innovation Capability ( $\beta = 0.684$ ,  $t = 7.507$ ,  $p < 0.001$ ). Hence, H2 was supported. Well explained result obtained in measuring H3 that Digital Leadership has a significant effect on Alliance Capability ( $\beta = 0.791$ ,  $t = 15.575$ ,  $p < 0.001$ ). Hence, H3 was supported.

The 5000 resamples of this research yield 95 per cent of the confidence interval, as shown in Table 3. An essential relationship is indicated by a confidence interval different from zero. The overall result of hypothesis testing summarized in the below table.

Table 5. Path coefficient

Hypotheses	Relationship	Original Sample (O)	Standard Deviation	T Statistics	P Values	Interval Confidence		F2	VIF	Decision
						2.50%	97.50%			
H1	Digital Leadership -> Dynamic Capability	0.572	0.065	8.806	0	0.446	0.685	0.486	1.000	Significant
H2	Digital Leadership -> Innovation Capability	0.684	0.091	7.507	0	0.468	0.829	0.879	1.000	Significant
H3	Digital Leadership -> Alliance Capability	0.791	0.051	15.575	0	0.671	0.876	1.677	1.000	Significant

Note: N= 132. Table 4 shows that all constructs have a path coefficient score with t-statistics  $> 1.96$  and  $p$ -value =  $0.000 < 0.001$ , which means that all constructs have significant effects on their respective dimensions.

#### 4. Discussion and conclusion

This study was designed to investigate the impact of digital leadership on organizational capabilities in the manufacturing industry, a study in the Malaysian context. Findings from this study revealed that digital leadership has influenced and impacted organizational capabilities (alliance capability, innovation capability and dynamic capability). The findings answer all research questions in a positive manner. Namely, the digital leadership has a positive relationship with organization capabilities (alliance capabilities, innovation capabilities, and dynamic capabilities) and plays a very important role in Malaysian contexts. Moreover, it can be important for not Malaysia but for this region that has its specific cultural, environmental [21, 25, 71], and other factors in common.

The results of this investigation demonstrate that the proposed integrative model fits the sample data. The hypotheses tested in this study received the full empirical support.

The study hypothesis (H1) suggests that digital leadership has a significant impact on dynamic capability. This demonstrates the need of digitalization to integrate, build and reconfigure the organization's competence as part

of sensing, seizing and transforming. This finding supports the previous study on how dynamic capability could enable an organization to sense market changes in detecting the weak signals, seize opportunities and threats to develop scenarios, and mitigate potential risks [42, 72, 73]. It could also transform the new paradigm and reshape the environment to navigate the dynamic capability to be more agile in the turbulence environment [10, 23]. Hence, it reveals that the development of dynamic capability required a strong strategic and management capability, which implies that firms should form disruptive changes in their management team to integrate and orchestrate the new digital capabilities into the existing skillset in order to have the adaptive capability, which will be performed by implementing a proper measurement system [74]. It also enables the transformation of organization capability to thrive and achieve higher, and to navigate the direction in adapting to volatility and market turbulence in the future [27, 33]. The development of dynamic capabilities is emphasized by a strong adaptive capability, strategic capability and management capability decisions. This finding supports the previous study on how dynamic capability could enable an organization to sense market changes in detecting the weak signals, seize opportunities and threats to develop scenarios and mitigate potential risks. It could also transform the new paradigm and reshape the environment to navigate the dynamic capability to be more agile in the turbulent environment [10, 23]. It means that the long-term view of management and firms, in anticipating the market dynamic, is important for firms. This indicates that the long-term view through transformation is a priority for firms in facing such a disruptive era. This finding enriched the archetype of leadership in the digital era, where digital leadership became a central factor in developing dynamic capabilities that enables the firm's capability to transform it into digital capability. Continuous learning to adapt to the changes also takes on a significant role in developing digital leadership.

Furthermore, with the empirical research results of this paper, the study hypothesis (H2) revealed that digital leadership has a significant impact on innovation capability. The findings show that the need for digitization in innovation, which acts as a key driver and a main source of competitiveness and competitive advantage, gives a positive impact on the firm's performance and firm's survival. These findings support the previous study of Jung and Radman [75], which holds that digital leadership has a significant and positive influence on the favors of innovation capability at the level of organizations. In the same way, findings of present and previous studies [76-78] suggest that innovation capability not only plays an energetic role within the organization to endorse innovative movements, rather it also ensures the marketplace victory in innovations. Innovation is the main factor of competitiveness and competitive advantage with a positive impact on firm performance and firm survival [24, 79, 80]. "Firms stand to benefit from investing in their capacity for innovation capability alongside their capacity for product and process innovation" argue by Mol and Birkinshaw [81]. The results and implementations seem to sustain the idea of this study. As a result, the study's main and essentially realistic implication is that innovation capability should be a knower of the deliberate mutual perspective of digital leadership. Digital leadership appreciates innovative actions and motivates the organization to increase the outcomes by generating new ideas, identifying new market opportunities, and implementing marketable innovations by leveraging existing resources and capabilities. Therefore, digital leadership is a magnificent variable to generate and increase innovation in an organization. Hence, this study recommends the organization's best implications to develop innovation through digital leadership.

The study's hypothesis (H3) revealed that digital leadership has a significant impact on alliance capability. The finding shows that digital leadership in alliances where it put in more effort to perform the full extent of their designated leadership roles. Based on resources-based views that provide the distinctive organization capability is important through providing internal resources that are valuable, rare, imperfectly immutable, and on-substitutable alliance capabilities [82]. When implementing alliance strategies and processes, alliance capability needs to exert leadership in a flexible, conscious and innovative manner so that its resources are rare, imperfectly imitable and create a competitive advantage in the market. Although research on alliances has increased, specifically in explaining effects on alliance performance, no comprehensive theoretical model that explains leadership effects on the development of alliance capabilities has yet been developed. The focus of this research, therefore, is to better understand the effects of leadership behavior on alliance capabilities.

#### **4.1. Theoretical and practical implications**

The study's outcome is also anticipated to offer practical implications to the manufacturing organization in Selangor. To stay competitive in the digital disruption era, the organization can create a sustainable competitive advantage and prioritize the blooming of innovative capabilities, which is parallel with technology's rapid growth. For instance, a concrete action that firms could take is innovation capital reinforcement in the dimension of a fiscal estimate, human capital and organizational framework. Other than that, the company creates new

digital capabilities with a skillset to adapt to volatility and market turbulence. Digital leadership appreciates innovative actions and motivates the organization to increase the outcomes by producing new ideas and thought, finding new business opportunities and chances, and utilizing internal and current resources and skills to introduce marketable and irreplaceable innovations.

In sum, this study recommends the organization's best implications to develop innovation through digital leadership. In addition, it is expected that the study's outcome can be the reference, guidance and platform for a firm to prepare to research further about the effort in increasing competitive advantage in the manufacturing industry in particular.

#### 4.2. Limitations and suggestions for future studies

This has limitations that will be the suggestions for future studies. The scope of research was conducted within the manufacturing industry in Selangor. Hence, the study can be enhanced by expanding the sample focusing on the manufacturing industry and targeting other industries across Malaysia. The number of respondents and the research methodology was also slender in current research; thus, the range can be upgraded accordingly for future study by involving numerous respondents by using exploratory tools for analysis purposes. The last limitation of this study is it does not objectively measure organizational performance. Hence, in a future study, the study can be enhanced by evaluating organization performance in adopting digital leadership.

#### 5. References

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