

Print ISSN: 2288-4637 / Online ISSN 2288-4645
doi:10.13106/jafeb.2020.vol7.no8.485

A Review of Dynamic Capabilities, Innovation Capabilities, Entrepreneurial Capabilities and Their Consequences

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Received: June 02, 2020 Revised: June 28, 2020 Accepted: July 09, 2020

Abstract

The paper proposes a conceptual model which provides direction for researchers to empirically establish the connections between dynamic capabilities, innovation capabilities, entrepreneurial capabilities and financial and strategic performance. The author uses systematic literature review process to select the articles used in this study. First, the present paper review and discuss some major contributions to the theories of dynamic capabilities, innovation capabilities, entrepreneurial capabilities and their consequences. The author seeks to highlight different understandings of the concepts to clarify the distinctions between them. Second, the conceptual model and propositions for future studies were developed. The proposed model highlights the different measures of dynamic capabilities, innovation capabilities, entrepreneurial capabilities and their consequences. The model with its associated propositions was developed base on limitations and gaps observed from past studies. It is focused on empirically testing the direct impact of dynamic capabilities, innovation capabilities, and entrepreneurial capabilities on the performance of SMEs in Vietnam. Nevertheless, the proposed model can be applied to similar situations in different contexts and countries. Further empirical testing of proposed model would contribute to enriching existing knowledge of dynamic capabilities, innovation capabilities and entrepreneurial capabilities within SMEs and how these capabilities foster superior performance.

Keywords: Dynamic Capabilities, Entrepreneurial Capabilities, Financial Performance, Innovation Capabilities, Strategic Performance

JEL Classification Code: M10, L25, L26

1. Introduction

There is a growing research interest on how firm capabilities promote competitiveness, business practice and performance. In the past scholars have focused on organisations' resources as a source of growth, competitive advantage and innovation (e.g., Penrose, 1959; Wernerfelt, 1984; Barney, 1991). Differences in firms' performance cannot be explained by the industry itself (Rumelt, 1991; McGahan & Porter, 1997) but by differences in strategic

capabilities (Eisenhardt & Martin, 2000; Winter, 2003), in terms of how firms deploy resources and competences (Johnson et al., 2014). The concept of capabilities and resources are not the same (Amit & Schoemaker, 1993). It is not enough for firms to control tangible or intangible resources to survive in the marketplace. To meet the demands from new markets, revolutionary changes in technology or new business models, firms need to renew themselves (Chakravarthy & Doz, 1992) and be innovative. The ability to configure and reconfigure resources is important. There are several types of capabilities in the literature.

The present paper focuses on dynamic capabilities, innovation capabilities and entrepreneurial capabilities. Amit and Schoemaker (1993) argue that capabilities can be functional and rooted in specific areas of the firm. Dynamic capabilities explain the firm's ability to develop competitive advantage in the time of uncertainty and change (Tece et al., 1997). Dynamic capabilities are useful in coping with dynamic environments. According to Teece's (2014) dynamic capabilities involves sensing opportunities

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to meet customer needs, seizing opportunities to mobilize resources and capture value, and continued renewal through transformation. Extant literature shows several theoretical studies on dynamic capabilities (e.g., Teece et al., 1997; Eisenhardt & Martin, 2000; Teece, 2014). Yet, we do not fully understand the relationship between dynamic capabilities and strategic performance in an emerging market such as Vietnam. Innovation capability is a firm's ability to mould and manage multiple capabilities (Lawson & Samson, 2001). Innovation capability enables firms to integrate key capabilities and resource to successfully stimulate innovation. Few scholars have examined the role of entrepreneurial capability on new venture performance (e.g., Zahra et al., 2011; Zhang et al., 2009; Abdelgawad et al., 2013). Yet, there is a lack of consensus on the concept of entrepreneurial capability (Afzal et al., 2018).

Prior studies place less emphasis on the importance of using the firm's capabilities to keep them current and productive (Zollo & Winter, 2002; Winter, 2003). To develop and optimise entrepreneurial capability, firms need to coordinate the mindsets and actions of managers to spot and exploit opportunities. Entrepreneurial capability facilitates the internal and external changes that enable firms to be competitive in the marketplace (Zahra et al., 2011). Thus, this paper x-rays the relationship between dynamic capabilities, innovation capabilities, entrepreneurial capabilities their consequences. The objective of this study is to develop a Dynamic Capability-Innovation Capability-Entrepreneurial Capability-Performance link model and suggest propositions for validation of the proposed model. This objective is achieved by reviewing and discussing some central contributions to the literature on capabilities (dynamic capabilities, innovation capabilities and entrepreneurial capabilities). This paper is arranged as follows. In the following section, this paper presents an overview of the review of concepts of dynamic capabilities, innovation capabilities and entrepreneurial capabilities. Followed by the methodology used in this study. Finally, discussion, conclusions and limitations and suggestions for future research are presented.

2. Literature Review

2.1. The Concept of Dynamic Capabilities

Collis (1994) opine that dynamic capabilities are organizational capabilities that make it possible to transform ordinary capabilities over time. He adds that dynamic capabilities face three challenges; erosion, substitution and learning about higher-order capabilities over time. In the word of Teece, Pisano, and Shuen (1997), dynamic capabilities, connotes the ability of a firm to integrate, develop, and reconfigure internal and external competences

to cope with fast-changing environments. According to Barreto (2010), dynamic capabilities are the firm's potential to systematically solve problems by sensing opportunities and making timely market-oriented decisions. Eisenhardt and Martin (2000) submitted that dynamic capabilities comprise of product development, strategic decision making and alliancing. They assert that these capabilities are identifiable, and the basic processes and activities are similar across firms but they are not equal across industries. Helfat et al. (2007) note that dynamic capability is the capacity of a firm to purposefully develop, expand or modify its resource base. Most literature reviews on the nature of dynamic capabilities (e.g., Wang & Ahmed, 2007; Easterby-Smith et al., 2009; Breznik & Hisrich, 2014) treat Teece et al. (1997) as the original definition of dynamic capabilities.

In light of Teece (2014), dynamic capabilities seek to match business opportunities and user needs by learning processes that are hard to copy. For analytical purposes, Teece (2007) notes that dynamic capabilities can be operationalised as the capacity (1) to sense and shape opportunities and threats, (2) to seize opportunities, and (3) to sustain competitiveness by improving, combining, protecting, and, when necessary, reconfiguring the business enterprise's resources. According to Teece (2007), sensing capability is the capacity of firms to constantly scan, spot, and explore opportunities across technologies and markets. In a fast-changing market, new information and knowledge can create opportunities for innovation. Sensing involves investment in research and development. Extant literature suggests that research activity promote a firm's knowledge and the ability of firms to evaluate the new information (Cohen & Levinthal, 1990; Todorova & Durisin, 2007).

Other studies demonstrate that externally available information and resources influence all innovation activities and the development of a firm (Yam et al., 2011). Integration capability is one of the three components of managerial functions which are relevant to dynamic capabilities (Teece et al., 1997). Structural complexity and the number of organizational units leads to an increase of transactional cost across organizational units (Teece, 2007). In this context, dynamic capability emphasizes more on optimising the transfer of technology/information between and among the various units in a firm. Indeed, integration facilitates learning, sharing of know-how and expertise through the transfer of technology and know-how within an organisation (Teece, 2014).

Integration capability focuses on both internal coordination and external integration activities such as integrating market and customer knowledge and integrating knowledge of emerging technologies (Iansiti & Clark, 1994) and transforming resources into innovative outputs. Reconfiguration capability enables

firms to maintain profitable growth by recombining and reconfiguring assets and organisational structures to adapt to changing markets and technologies. Reconfiguration capability support firms to maintain evolutionary fitness and enable them to escape from unfavourable path dependencies (Teece, 2007). Karim and Capron (2016) pointed out that reconfiguration capability includes activities such as adding, redeploying, recombining, or divesting resources or business units.

Adaptive capability suggests a firm's ability to quickly coordinate and reconfigure resources to respond to sudden environmental changes (Gibson & Birkinshaw, 2004) while sustaining performance (Aggarwal, Posen, & Workiewicz, 2015; Kaur & Mehta, 2016). It has been argued that adaptive capability allows a firm to spot and leverage the opportunities emerging in the market (Tseng & Lee, 2014; Hofer, Niehoff, & Wuehrer, 2015). Firms possessing adaptive capability learn faster (Akgün, Keskin, & Byrne, 2012), quickly respond to changes in line with firm priorities (Wang & Ahmed, 2007) and integrate external information into the knowledge base of the firm (Tseng & Lee, 2014).

2.2. The Concept of Innovation Capabilities

The concept of innovation capabilities is confusing and is complementary to that of dynamic capabilities (Brezinik & Hisrich, 2014). Wang and Ahmed (2007) use innovation, adaptive and absorptive capabilities to conceptualise innovation capabilities. Teece (2007) assert that selecting products and business models are two core business processes central to innovation. From strategic management stance, innovation and innovation capabilities can be an aspect of dynamic capabilities.

According to Lawson and Samson (2001), innovation capability connotes the ability to mould and manage several capabilities. Arguably, firms with innovation capability can integrate important capabilities and resources to successfully foster innovation. Indeed, a firm's reconfiguration capability promote continuous transformation and enable them to obtain new resources and capture innovation benefits. Other scholars have conceptualised innovation capabilities as consisting of marketing innovation, product innovation and process innovation capabilities (e.g., Camison & Villar-Lopez, 2014; Nwachukwu, Chladkova, & Olatunji, 2018). Product innovation capability allows firms to effectively change their resources into innovative offerings that are unique and are better in terms of quality to exceed customers' expectations (Camison & Villar-Lopez, 2014). Process innovation capabilities are linked to a firm ability to improve its internal processes (Damanpour, Walker, & Avellaneda, 2009) and reduce the cost of production (Damanpour, 2010) which foster superior performance.

2.3. The Concept of Entrepreneurial Capabilities

Extant literature suggests that entrepreneurial capabilities consists of four distinct and interrelated dimensions that focus on sensing, selecting, shaping, and synchronizing of opportunities (Birkinshaw, 2001; Bingham et al., 2007; Felin, Zenger, & Tomsik, 2009). The sensing dimension is about spotting or envisioning market and technological opportunities within and outside an industry (Burgelman & Grove, 2007; Klein, 2008). Alert scanning and searching (Tang, Kacmar, & Busenitz, 2012), experimenting (Dyer, Gregersen, & Christensen, 2009), and imagining (Felin et al., 2009; Klein, 2008) are important mechanisms for sensing. Sensing opportunities can come from employees, managers and decision-making process of an organisation. Shaping connotes orchestrating of relationships among internally and externally available capabilities and resources for opportunity realization (e.g., Felin et al., 2009). Synchronizing focuses on simultaneous exploration and exploitation of opportunities and harmonizing a firm's actions with the speed of the environment (Bourgeois & Eisenhardt, 1988; Eisenhardt, 1989). Synchronizing operates through three mechanisms: temporal heuristics focus on sequence, pace, and timing.

Procedural heuristics articulates process or actions for opportunity execution. Priority heuristics emphasizes the ranking of opportunities in terms of their importance for the firm (Bingham et al., 2007). Entrepreneurial capabilities co-evolve with the environment (Lewin & Volberda, 1999; Volberda & Lewin, 2003) and is developed through experience and reflection (Bingham et al., 2007). In this context, entrepreneurs can re-conceptualize their environments, identify changes and emerging opportunities. Considering the skills and resources needed by entrepreneurs, entrepreneurial capabilities must align with the dynamics of the ecosystems and opportunities being optimised. Other scholars suggest that entrepreneurial capabilities consist of several subtle human characteristics such as passion and self-achievement, integrity and commitment, ethical leadership and active learning and analysis (Ohyama, Braguinsky, & Murphy, 2004; Cardon et al., 2005; Cardon et al., 2009; Tang, Kacmar, & Busenitz, 2012).

2.4. Empirical Review

2.4.1. Dynamic Capabilities and Its Consequences

Chakrabarti, Vidal, and Mitchell (2011) demonstrated that the development of the institutional market environment influences the ability of firms to benefit from the reconfiguration of resources and businesses. The literature shows that the relationship between dynamic capabilities and competitive advantage of firms is unclear (e.g., Chaharmahali & Siadat, 2010; Krzakiewicz, 2013). Some

scholars opine that dynamic capabilities do not show the attributes of heterogeneity and hence cannot be a source of competitive edge (e.g., Zahra, Sapienza, & Davidsson, 2006; Easterby-Smith & Prieto, 2008; Ogunkoya et al., 2014) and that the impact of dynamic capabilities is limited (Zott, 2003) and indirect (Cepeda & Vera, 2007; Nieves & Haller, 2014). Other researchers argue that dynamic capabilities foster competitive advantage (e.g., Ambrosini & Bowman, 2009; Arndt, 2011; Aramand & Valliere, 2012; Li & Liu, 2014; Wang et al., 2015; Lee, Wu, Kuo, & Li, 2016) and technical performances (Yi, Han & Cha, 2018). The author reason that dynamic capabilities promote competitiveness and enhance firm performance. Indeed, past studies that affirmed the connection between the individual dynamic capability and competitiveness are highlighted below.

Adaptive capability helps a firm to quickly adapt to the fast-changing environment (Kaehler, Busatto, Becker, Hansen, & Santos, 2014), create value and survive in the marketplace (Rouse & Ziestma, 2008). Thus, adaptive capability can enable a multinational firm to gain a competitive advantage (Dixon, Meyer, & Day, 2013). Absorptive capability facilitates the transformation of new or acquired knowledge into usable knowledge that allows a firm to gain competitive advantage (Zhou & Li, 2010; Adeniran & Johnston, 2012) and strategic edge over competitors (Delmas, Hoffmann, & Kuss, 2011; Duchek, 2013; Su, Ahlstrom, Li, & Cheng, 2013). A firm ability to absorb external knowledge can lead to the firm achieving competitive advantage (Fogg, 2012). Even though researchers recognise that dynamic capabilities of the firm may positively contribute to firm performance. Yet, there is no strong empirically evidence in the literature that supports this notion (Hitt et al., 2001; Helfat et al., 2007). More so, most of the studies were conducted in developed countries. It will not be out of place to examine this subject in emerging market contexts.

2.4.2. Innovation Capabilities and Its Consequences

Extant literature suggests that innovation promote competitiveness and growth (e.g., Pitelis, 2009), performance (e.g., Cho & Pucik, 2005; Lestari, Leon, Widyastuti, Brabo, & Putra, 2020) and firm's price to book value (Basuki, Pulungan, & Udin, 2020). Firms need to deploy, mobilize, integrate and dynamically align their resources and capabilities to innovate and achieve competitive advantage (Liao, Kickul, & Ma, 2009; Yam, Lo, Tang, & Lau, 2011). In the study of Chinese firms, Guan and Ma (2003) found that innovative capabilities influence export performance. They concluded that export growth is associated with the total improvement of innovation capability dimensions, except for manufacturing capabilities. Keskin (2006) submitted that market orientation and learning impact positively on innovation capabilities in SMEs. Cabral (2010) reported

that innovation capability is essential for firms to cope with the rapid-changing turbulent environment and to gain a competitive advantage.

Past studies have shown that firms with higher innovative capabilities outperform competitors, post higher profitability and survive in the marketplace for a long time (Alfirevic & Talaja, 2013; Agbim et al., 2014; Alrubaiee, Alzubi, Hanandeh, & Ali, 2015; Granados, 2015; Wijekoon & Galahitiyawee, 2015). Other scholars suggest that different innovation capabilities such as marketing innovation capability (e.g., Nwachukwu et al., 2018), product innovation and process innovation capabilities (Camison & Villar-Lopez, 2014) are important for firm success. More of that, innovation capabilities have positive impacts on financial performance (Hoang & Ngoc, 2019). The findings of the study done by (Lee & Xuan, 2019) suggest that manufacturing (i.e. technology and product innovation) is positive relation to the total factor productivity increase in the short-run and total output growth in the long-run. Also, promoting technology and innovation management and supporting R&D subsidies may reduce the marginal cost of conducting R&D and increase the rate of technology and innovation management and R&D activity.

2.4.3. Entrepreneurial Capabilities and Its Consequences

In the literature, entrepreneurial capability has been examined using two perspectives; institution and individual skill and knowledge. Afzal, Siddiqui, and Dutta (2018) examined the influence of entrepreneurial capabilities on innovation performance and new venture performance. They found that entrepreneurial capability dimensions of passion, integrity and commitment, leadership and management capability and learning capability have a positive impact on innovation performance. Further, entrepreneurial capabilities dimensions are positively associated with new venture performance and prior experience. Zahra and George (2002) reported that entrepreneurial capabilities promote organisational change. Burgelman and Grove, (2007) submitted that entrepreneurial capabilities induce change into the firm's environment to foster a competitive edge.

Entrepreneurial capability involves judgments and actions of an entrepreneur that contributes to reshaping and leveraging a firm's capability portfolio (Adner & Helfat, 2003; Augier & Teece, 2009), firm competitiveness and performance (Lestari, Leon, Widyastuti, Brabo, & Putra, 2020). Entrepreneurship plays an important role in creating corporate capabilities as (e.g., marketing, R&D, operations capability), has a positive effect on dynamic capability (Yi, Han, & Cha, 2018). Empirical studies on entrepreneurial capability are scanty. The author reason that more studies will uncover the role entrepreneurial capability plays in promoting superior performance in varying contexts.

3. Research Methodology

A systematic literature review was done to identify relevant articles within the entrepreneurship, innovation and strategic management literature. Systematic literature review method reduces bias through a comprehensive literature search (Tranfield, Denyer, & Smart, 2003). The author conducted a search using the keywords, dynamic capabilities, innovation capabilities and entrepreneurial capabilities. The review focused on both qualitative and quantitative studies from 1959 to 2020. The author included studies that focussed on dynamic capabilities, innovation capabilities and entrepreneurial capabilities related concepts. In total 102 articles from EBSCO host, Google Scholar, Scopus and Web of Science databases were reviewed.

4. Findings and Discussion

Capabilities focus on how a firm optimise and align with environmental changes to gain competitive advantage. It shows an organisation ability to assess changes in market trends and share resources accordingly (Oktemgil & Gordon, 1997). Thus, competitive advantage emanates from competitive behaviour and depend on strategic resources and capabilities owned and controlled by a firm (Nwachukwu & Chladkova, 2019). Even though past studies have demonstrated a connection between the analysed concepts, competitive advantage and new venture performance. Yet, research that examines the relationships between dynamic capabilities, innovation capabilities, entrepreneurial capabilities, and financial and strategic performance simultaneously is still lacking.

Therefore, this study develops and presents a conceptual model and propositions to examine the direct and combine effects of dynamic capabilities, innovation capabilities, entrepreneurial capabilities, and their consequences (financial and strategic performance). Consequently, the proposed perspective will require further investigations into the relationship between dynamic capabilities, innovation capabilities, entrepreneurial capabilities and financial and strategic performance indicators. It is evident from the literature review that dynamic capabilities have three dimensions; integration capability, reconfiguration capability and adaptive capability. Innovation capabilities focus on product innovation capability, process innovation capability and marketing innovation capability. The present study focuses on human characteristics aspect of entrepreneurial capabilities (e.g. passion, self-achievement, integrity and commitment, and active learning and analysis). Consequences are operationalised based on Santo and Britos (2012) which measured financial performance with profitability and growth and strategic performance with customer satisfaction, employee satisfaction, social

performance and environmental performance. The author anticipates that future empirical research will support the relationship between these variables and provide insight into the capabilities that can foster performance. Based on the literature review, the author makes the following propositions;

1. Dynamic capabilities will foster financial and strategic performance
 - 1a. Integration capability will foster financial and strategic performance
 - 1b. Reconfiguration capability will foster financial and strategic performance
 - 1c. Adaptive capability will foster financial and strategic performance
2. Innovation capabilities will positively influence financial and strategic performance
 - 2a. Product innovation capability will positively influence financial and strategic performance.
 - 2b. Process innovation capability will positively influence financial and strategic performance
 - 2c. Marketing innovation capability will positively influence financial and strategic performance.
3. Entrepreneurial capabilities promote financial and strategic performance.

Building on literature, the author proposes a framework that draws on past studies to stimulate research agenda in strategic management (organisational capabilities) and entrepreneurship within Small and Medium Enterprises (SMEs) in the emerging market, particularly Vietnam. Figure 1 shows the proposed relationship between dynamic capabilities, innovation capabilities, entrepreneurial capabilities and performance. Based on Figure 1, this paper identifies three propositions in a bid to empirically test the relationships.

Where: DC- dynamic capability, INC- innovation capability, EC- entrepreneurial capability, IC- integration capability, RC- reconfiguration capability, AC- adaptive capability, PIC- product innovation capability, PSIC- process innovation capability, MIC- marketing innovation capability, PF- Performance, FP- financial performance, SP- strategic performance.

5. Conclusions

Firms can reduce inefficiencies and post superior performance by developing innovative capabilities. The proposed model highlights the different measures of dynamic capabilities, innovation capabilities, entrepreneurial capabilities and their consequences. The model with its associated propositions was developed base on limitations and gaps observed from past studies. It is focused on

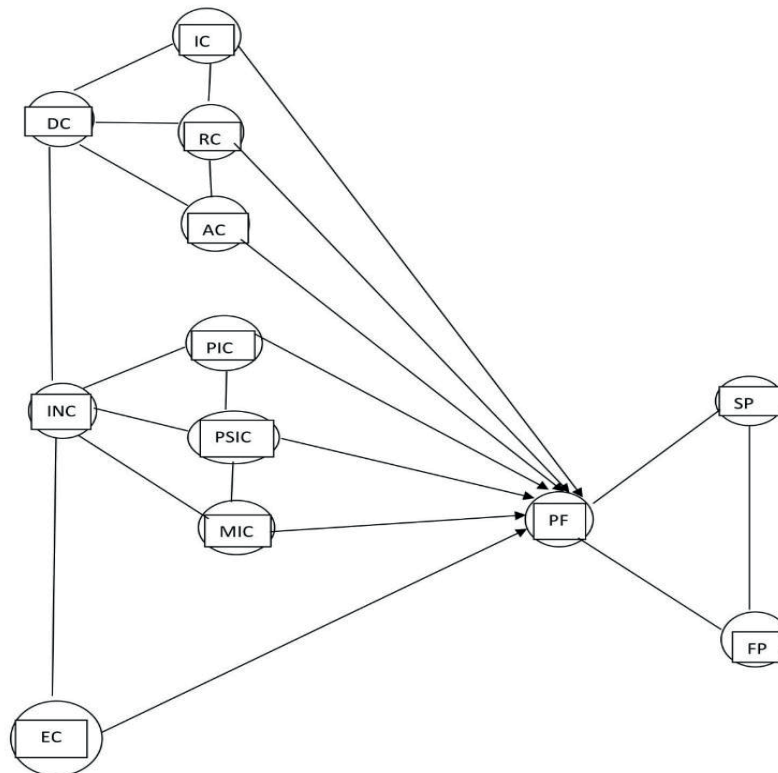


Figure 1: Conceptualization of dynamic capability, innovation capability, entrepreneurial capability-performance link proposed model.

empirically testing the direct impact of dynamic capabilities, innovation capabilities, entrepreneurial capabilities on the performance of SMEs in Vietnam. Nevertheless, the proposed model can be applied to similar situations in different contexts and countries. Further empirical testing of proposed model would contribute to enriching existing knowledge of dynamic capabilities, innovation capabilities and entrepreneurial capabilities within SMEs and how these capabilities foster superior performance. The author proposes that each of these capabilities consists of several multiple dimensions. Arguably, dynamic capability, innovation capability and entrepreneurial capability are important to changing the competitive game. Thus, adding to the existing literature explaining game change. The current paper sets an agenda for research on these issues and call for future empirical studies of how SMEs deploy their capabilities to enhance both financial and strategic performance.

6. Limitations and Future Research Agenda

The present study only developed a conceptual model and three main propositions for empirical testing. Future

research should empirically test the goodness of fit and variables conceptualised in this study. Researchers need to empirically examine the connections between dynamic capability, innovation capability, entrepreneurial capability and performance. It would be interesting to ascertain if there are different types of dynamic capability, innovation capability and entrepreneurial capability; such variety could explain, the different strategic actions that firms pursue in their respective industries. It would be useful to explore how these different capabilities influence organisational adaptation, survival and performance. A five-point Likert scale ranging from 1 = strongly disagree to 5 =strongly agree should be used to collect data from respondents. SmartPLS Structural equation Modelling (SEM) should be employed to test the relationship in the proposed research model. Smart PLS software is useful for prediction-oriented and exploratory study (Hair et al., 2016). More so, Smart PLS is suitable for simultaneously addressing multiple dependency associations with higher statistical efficiency (Ringle & Sarstedt, 2016).

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