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Presentation date: February, 2023
Date of acceptance: April, 2023
Publication date: June, 2023

THE EFFECT

OF STRATEGY INNOVATION AND FUNCTIONAL LEVEL INNOVATION ON SUSTAINABLE COMPETITIVE ADVANTAGE

EL EFECTO DE LA INNOVACIÓN ESTRATÉGICA Y LA INNOVACIÓN A NIVEL FUNCIONAL EN LA VENTAJA COMPETITIVA SOSTENIBLE

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Suggested citation (APA, seventh ed.)

Duc Dao, Le., Manh Hoang, V., Uyen Nguyen, T., Linh Nguyen, L. & Linh Vu, T. T. (2023). The effect of strategy innovation and functional level innovation on sustainable competitive advantage. *Universidad y Sociedad*, 15(S2), 228-235.

ABSTRACT

Based on the strategic approach, this paper is to examine the cause-and-effect in the strategy implementation process from the strategy innovation level to functional innovation practices and organization's outcomes. The study uses data that were collected from 289 young firms in Vietnam. PLS-SEM using Smart PLS 3.0 software was utilized to evaluate the hypotheses. The findings revealed all four significant effects of strategy innovation on organization innovation and technology innovation, and both organization innovation and technology innovation influence significantly sustainable competitive advantage. These results sustained strength for a strategic approach that created important practical evidence for the current stock of knowledge and opened up the important orientation for enhancing the sustainable competitive advantage of the young firms in Vietnam.

Keywords: Innovation, competitive advantage, sustainable competitive advantage, young firm, strategic approach, strategy implementation.

RESUMEN

Basado en el enfoque estratégico, este documento analiza las causas y los efectos del proceso de implementación de las estrategias de innovación en empresas en Vietnam, mediante la valoración de sus procesos funcionales y los resultados de la organización. El estudio utiliza datos recopilados de 289 empresas jóvenes en Vietnam. Se utilizó una metodología PLS-SEM utilizando el software Smart PLS 3.0 para evaluar los resultados de la investigación. Los hallazgos revelaron los cuatro efectos significativos de la innovación estratégica en la innovación organizacional y la innovación tecnológica, y como la mismas influyen significativamente en la ventaja competitiva sostenible. Estos resultados sustentaron la fortaleza de un enfoque estratégico para la gestión del conocimiento y suministra una información importante para mejorar la ventaja competitiva sostenible de las empresas jóvenes en Vietnam.

Palabras clave: Innovación, ventaja competitiva, ventaja competitiva sostenible, empresa joven, enfoque estratégico, implementación de estrategia.

INTRODUCTION

Competitive advantage enhancement for Vietnamese young enterprises is considered one of the most important tasks in the context of the Industrial Revolution 4.0 (IR 4.0). The "dynamic context" of IR 4.0 requires companies to improve their capabilities for adapting to the changing environment. One of the most effective solutions is innovation. As a start-up nation in orientation, the number of young enterprises in Vietnam has increased sharply in recent years Vietnam General Statistics Office (2021) However, to survive and succeed, it is required young firms to both quality and sustainable development in their business operation Nguyen &. Zainal (2016) Young enterprises which have limited resources, experience, and reputation, need to find solutions based on innovation capacity in order to establish a competitive position in the market (Breue & Lüdeke-Freund, 2017; Ferreira et al., 2018)

However, the majority of studies about innovation mainly focus on a group of large-scale enterprises or enterprises in general and there is few official research works directly on young enterprises Anwar & Ali (2020) Recently, there have been some more studies focusing on innovation practices in small enterprises, including young enterprises. Therefore, a few studies have initially shown the positive impact of innovation on the competitive advantage or performance of enterprises Kim & Vonortas (2014) However, research on the innovation of young enterprises in emerging markets is still a topic that has not been paid attention to. In Vietnam, there are some remarkable studies on innovation finding out the factors that impact innovation and the role of innovation in enterprises but these studies were conducted in enterprises of various sizes in supporting industries. Thus, in the current system of research on innovation, and competitive advantage, the research focused on young enterprises is still a topic that has received little attention in implementing research.

As a country with an emerging economy, young enterprises in Vietnam play a vital role in the economy. Specifically, according to the definition of Brown et al. (2009) and data of the number of young enterprises that are operating under 15 years in 2005 is 113,353 and by 2020, the number of young enterprises is currently operating is 811,538, accounting for more than 86% of the total number of enterprises in the country. Thus, although young enterprises play an important role in the economy, in recent years there have been few studies focusing on young enterprises. Because young enterprises have many different characteristics, specific research for young businesses needs to be implemented. Therefore, this empirical study evaluates the impact of the applications of innovation on the sustainable competitive advantage of young enterprises to meet the extreme requirements both in theory and in practice.

A reviewer of the literature on the subject the role of innovation in maintaining a competitive advantage can be exploited in various types of firms. The RBV focuses on expressing the linkage between firm characteristics and firm performance Barney (1991) Accordingly, a firm may achieve a competitive advantage if it can exploit the capability which is VRIN (valuable, rare, inimitable, and non-substitutable). Among numerous firm resources and capabilities, innovation is considered an outstanding resource that will become valuable (V), rare (R), inimitable (I), and non-substitutable (N) capability. Noticeably, innovation is not only a specific attribute of large-size or developed enterprises but also be exploited in all types of firms. Exploitation innovation capability enables firms to take full advantage of the external environment in the context of IR 4.0 (Ferreira et al. (2020) From this theoretical viewpoint, a research model of the relationship between innovation application and sustainable competitive advantage is established. In which, innovation applications examined on five aspects are considered factors affecting sustainable competitive advantage.

METHODOGY

The theoretical budgets to carry out the investigation were based in the positive impact of innovation on competitive advantage or firm performance was explored in prior studies (Puspita et al., 2020; Maldonado-Guzmánet al., 2019) Innovation allows firms to create a unique resource that is extremely difficult for rivals to copy or imitate. Accordingly, innovation can be exploited to create unique assets to become a competitive advantage for a firm. Innovation plays the role of a strategic tool that allows the firm to achieve a competitive advantage. In the context of the fiercely competitive environment, innovation is also considered an effective approach to maintaining a competitive advantage. Firms must obtain greater adaptability and flexibility through exploiting innovation which allows firms to quickly respond to the changing environment. Hence, innovation is considered a type of dynamic capability that enables a firm to create a competitive advantage. By exploiting innovation, firms can change their routines and operations which can combine resources in a superior way to achieve competitive advantage. Innovation is conceded as a unique capability that creates a new combination of internal resources and creative exploitation of internal and external advantages to maintain a sustainable competitive advantage. The innovation practices allow firms to get

superior performance as well as improve their access to valuable resources of their industry and themselves.

However, due to a variety of aims and scopes of studies on innovation and the different impact levels of IR 4.0 on the national and industry contexts in the current period, the current knowledge store has been not enough the empirical research to explore the impact of the innovation application in young enterprise in developing countries. Firstly, in terms of the scope, innovation is defined as the ability of a firm to create new products, new services, new processes, or new systems in response to changing requirements that result from the changes in the business environment, technology, and competitive structure. This definition implies a wide application range of innovation in affecting many managerial levels in a firm. Innovation is not only at functional level but also need to be utilized at strategy level to adapts well with the changing from environment Hairet al. (2014) And the view of strategic management indicates the causal effect of strategy innovation level on innovation at functional level which is carried out in strategy implementation state.

In addition, as mentioned above, innovation is even more dynamic and open when it is cooperated with stakeholders, allowing firms, especially young enterprises to achieve quickly competitive advantage in the context of IR 4.0. Besides, there have been few studies comprehensively on innovation level especially exploring the causal effect from innovation at strategy level to innovation at functional level (Tidd & Hull (2003) And mostly, the research objects of these studies have included enterprises of different ages and sizes. It is difficult to find a particular study on innovation practices in young firms. Therefore, this study investigates comprehensively innovation practices and considers them as the initial capabilities to maintain the sustainable competitive advantage of young firms. The hypotheses are proposed as followed:

H1. Strategy innovation has a positive impact on Technology innovation of young enterprises.

H2. Strategy Innovation has a positive impact on Organization innovation of young enterprises

H3. Technology innovation has a positive impact on sustainable competitive advantage of young enterprises.

H4. Organization innovation has a positive impact on sustainable competitive advantage of young enterprises.

Finally, from strategic stand point and contingency theory, different characteristics of the firm also have a significant effect on organizational results. The internal characteristics of firm such as firm size and firm age will also make sound as the control variables in the study on the interpretations of variance in organizational performance or competitive advantage. Therefore, the control variables which include firm size and firm age are also addressed in this study

This study used a questionnaire with a Likert scale of 1-7 developed from previous studies. The items which are used to measure strategy innovation (5 items) were adopted from Taghizadeh et al. (2016) process innovation (6 items), system innovation (7 items), organization innovation (5 items), and technology innovation were adapted from the study of (Hull & Tidd, 2003; Hull 2004; Tidd &Bessant, 2009). Besides, the items used to measure sustainable competitive advantage (4 items) were adapted from Salunke et al. (2019) The questionnaire was translated into Vietnamese and then back-translated to ensure an accurate understanding of the meaning of each item for surveying. The authors also pre-tested the

A quantitative research approach was used to conduct this research. Data was collected from managers of young enterprises in Vietnam with the support of Young Vietnamese entrepreneurs (VYEA). In order to improve the research quality of young enterprises, this study used only answers collected from enterprises that have been operating from 1 year to less than 15 years as the definition given by Brown et al. (2009) is that “young enterprises are enterprises that have been in business under 15 years”. However, to measure competitive advantage and innovation, this study used data collected from enterprises that have at least 1 year in business. In addition, respondents are leaders with at least 1 year of working experience at the enterprise to assure that they understand their organization. As a result, there are 289 valid responses (in a total of 350 responses collected). questionnaire by sending it to 12 experts and interviewing them about the appropriateness and ease of understanding of the questionnaire and the items.

RESULTS AND DISCUSSION

The descriptive statistics of 289 valid responses show that most of the surveyed firms have operating for 3-15 years, accounting for 8.5%, and 1-3-year-old enterprises contribute the smallest proportion. In terms of firm size, the majority of enterprises participating in the survey are small and medium-size (the number of employees under 300), accounting for 90.7%. For business, the rate of manufacturing enterprises is 43.9% while the proportion of service organizations is 56.1%.

For demographic characteristics, the respondents were working at the position of Head of Department or equivalent positions account for 42.6%, 27.3% were the Deputy

General Director/Deputy Director and 30.1% were the CEO or the administrator. In terms of education, the majority of respondents had bachelor's and graduate degrees (90%), 6.2% had a high school diploma, and the rest was lower degrees. In addition, as mentioned in the sampling, this study surveys manager who has worked at the firm he/she represents for at least 1 year. Therefore, 100% of the respondents had at least 1 year of working experience. The descriptive statistics illustrate that 49.1% of respondents have 5 years of experience or more, 30.1% of answerers have 3 to 5 years of experience, and the rest belongs to managers having 1-3 years of experience. These characteristics of samples allow authors to access valuable and reliable information to use for the next steps of data analysis.

The measure model evaluation is the first step to be performed in PLS-SEM. The measurement model (the outer model) reveals the relationship between the latent variables and the corresponding observed variables (Hair et al., 2017) Evaluating the measurement model allows checking for the quality of the scales by considering the reliability and validity. By running the PLS Algorithms, three important criteria are needed to examine including the internal consistency, the reliability, the convergent validity, and the discriminant validity.

To evaluate the consistency of the scale, it is suggested to check Cronbach's Alpha and Composite Reliability (CR), To be consistent scale in each respective variable, the Cronbach's Alpha and CR must be greater than 0.6 and get a higher reliability level if these two criteria greater than 0.7. To evaluate the convergent validity, since latent variables are reflective constructs, the outer loading and the total variance extracted (AVE) are required to test. To achieve convergence, outer loading and AVE must be 0.7 and 0.5 or higher, respectively. To evaluate the discriminant validity, Henseler et al. (2015) suggest checking the discriminant level among the latent variables by testing the HTMT ratio. Accordingly, the HTMT ratio between the pairs of indicators is required to be lower than 0.85. Table 1 displays the results of the measurement model assessment.

Table 1. The measurement model assessment

Latent variables and items	Outer loading	Cronbach's Alpha	rho_A	CR	AVE
Organization innovation (ORG)		0.857	0.860	0.898	0.638
ORG1	0.764				
ORG2	0.803				
ORG3	0.836				
ORG4	0.842				
ORG5	0.744				
Strategy innovation (STR)		0.838	0.840	0.885	0.606
STR1	0.768				
STR2	0.765				
STR3	0.800				
STR4	0.789				
STR5	0.770				
Technology innovation (TTE)		0.876	0.887	0.910	0.670
TTE1	0.703				
TTE2	0.863				
TTE3	0.870				
TTE4	0.821				
TTE5	0.826				
Sustainable competitive advantage (SCA)		0.869	0.876	0.910	0.717
SCA1	0.841				
SCA2	0.895				
SCA3	0.817				
SCA4	0.833				

Source: owner elaboration

The results of the measurement model assessment illustrate that the outer loading of all constructs is 0.7 or more, and Cronbach's Alpha and CR are both greater than the recommended minimum. For the AVE index, all latent variables range from 0.606 to 0.717. For the discriminant validity, the results of checking the HTMT index displayed in Table 2 show that all pairs of constructs are less than 0.85. Hence, it can be confirmed that the scales in the study all meet the requirements of consistency, convergence, and discriminant, ensuring good measurement for latent variables.

Table 2. The results of checking HTMT

Latent variables	Sustainable competitive advantage	Strategy innovation	Technology innovation	System innovation	Process innovation	Organization innovation
Sustainable competitive advantage						
Strategy innovation	0.723					
Technology innovation	0.695	0.737				
Organization innovation	0.629	0.705	0.778	0.791	0.819	

Source: owner elaboration

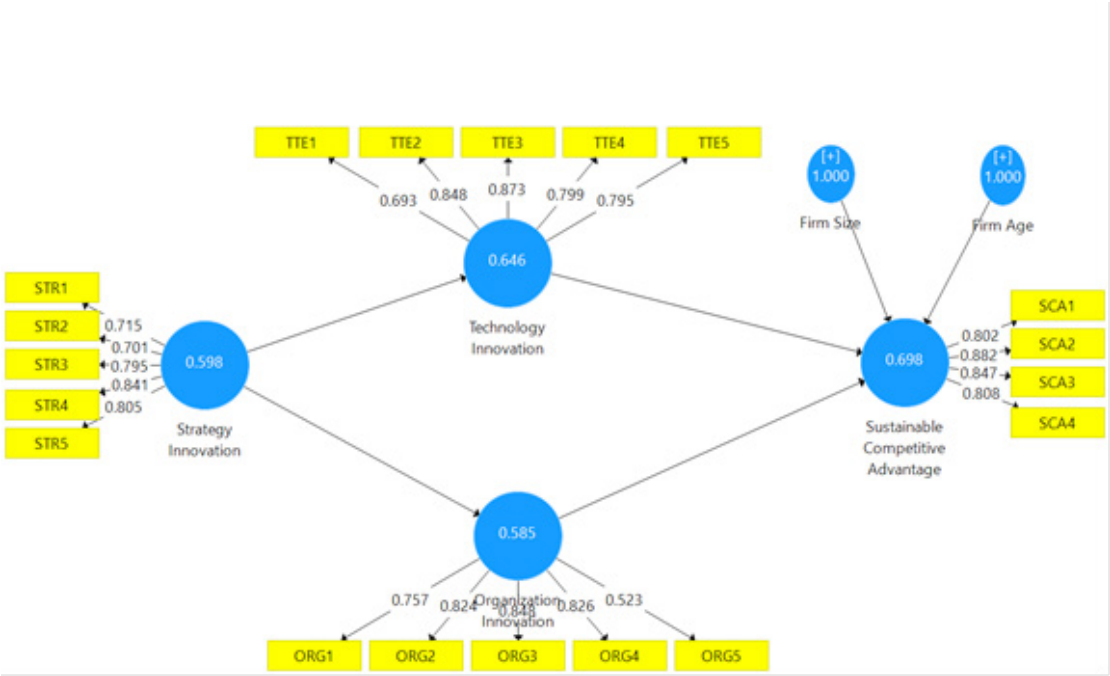

Figure 1. The results of the measurement model assessment.

Source: owner elaboration

The first step of the structural model assessment is checking the multicollinearity by examining VIF (Variance Inflation Factor). recommend that VIF scores should be less than 5 to ensure that the model has no multicollinearity. The results express that VIF scores range [1.133; 3.388]. Thus, there is no multicollinearity in the inner model.

Next, examining the research hypotheses is conducted. Since this study explores the direct relationship between exogenous and endogenous variables, the testing of research hypotheses is performed based on Bootstrapping 5000 samples with the One-tailed technique. To determine the suitability and acceptance of the research hypotheses, it is

required to examine Path Coefficient, P-value, T-value, Confidence Interval (CI), and R2. Accordingly, P-value <0.05, T-Value >1.65, and CI index must be in the same direction and not be "0". The results of examining the research hypotheses are expressed in Table 3.

Table 3. The results of the research hypotheses examination

H	Relationship	Path coefficient	T-Value	P-Value	Effect size	CI (95% Bias Corrected)		Supported
						0.00%	95.00%	
H1	Strategy innovation è Technology innovation	0.65	17.667	0	0.669	0.581	0.704	YES
H2	Strategy innovation è Organization innovation	0.604	12.952	0	0.625	0.518	0.671	YES
H3	Technology innovation è Sustainable competitive advantage	0.447	6.242	0	0.294	0.32	0.556	YES
H4	Organization innovation è Sustainable competitive advantage	0.229	2.913	0.002	0.024	0.103	0.361	YES

Source: owner elaboration

Later, examining R2 to explore the level of explanation of exogenous variables with endogenous variables in the study [20]. Accordingly, if R2 reaches 0.26; 0.13; 0.02, respectively, it will represent a significant, moderate, and weak explanation [5]. For H1 and H2, R2 are 0.401 and 0.385, respectively. These results show that strategy innovation explained 40.1% and 38.5% of the variation of technology and organization innovation, respectively. For the variation of sustainable competitive advantage, R2 is 0.426 explore the significant explanation of technology and organization innovation of Vietnamese young enterprises.

The results of examining the research model have revealed the important roles of strategy, process, and system innovation in improving the performance of young firms, in general, and Vietnamese young firms, in particular. These findings have provided valuable evidence to clarify the view of the importance of nurturing innovation capabilities for enterprises, especially for young firms. This study is one of the pioneering empirical studies in adding to the lack of current knowledge on innovation management of young firms in developing countries in the context of IR 4.0. By surveying 289 Vietnamese young firms, the findings have identified the positive influence of strategy innovation on both technology and organization innovation. In other words, strategy innovation plays an initial role in nurturing other innovation practices. Besides, this study has exposed the significance of technology and organization innovation in sustaining the competitive advantage of young enterprises. These findings are not only consistent to the previous finding in other context of SMEs or large firm in develop country but also extend the current literatures in the context of young firms in developing countries. The findings are also novel in term of strategic approaching which explore the solidly causal effect of innovation from strategy level to implementation level.

In terms of the linkages among strategy innovation, technology innovation, and organization innovation, the results have shown that technology innovation (Beta = 0.650) has been impacted more significantly than organization innovation (Beta = 0.604) by strategy innovation. These findings have provided the initial role of strategy innovation in nurturing both technology and organization innovation. In addition, the findings have explored the prominent role of technology and organization innovation in maintaining the sustainable competitive advantage of young firms. The results of model testing show that innovation in strategies, technology and organization plays an important role in improving and enhancing the performance of young enterprises in general and young enterprises in Vietnam. This result has provided an additional theoretical and empirical evidence to guide innovative applications in enterprises, especially for young enterprises. This research finding confirms the role and importance of enhancing innovation in young enterprises. Furthermore, the results of this study not only fill the theoretical and practical gaps, but are also reinforced by resource theory, competitive advantage theory and knowledge-based management theory. as well as theoretical and practical studies in other countries. Therefore, this research result has an important directional role for the formation of solutions to promote the application of innovation in young enterprises in order to enhance competitive advantages for enterprises in the context of the current technological revolution.

In addition, it is necessary for young enterprises to formulate long-term strategies for innovation, considering innovation development as one of the most priority in their long-term orientation. Besides, young firms are suggested to pay attention to analyze and evaluate the strategic environment through the use of technical analysis environment. It is necessary for them to forecast changes in the market as well as identify opportunities and threats to come up with adaption strategies of products and services on the market. Therefore, young business leaders especially need to enhance innovation from strategy level, then carry out technology and organization innovation consistently at implementation level in order to obtain the sustainable competitive advantage.

CONCLUSIONS

Research on innovation and sustainable competitive advantage in young enterprises is one of the attractive topics needed to be concerned, especially in the context that Vietnam is orientated as a start-up nation. This study can be recognized as the first study based on strategic approach examining the impact of innovation on the sustainable competitive advantage of Vietnamese young firms. The study has contributed to the current knowledge of innovation, especially for young enterprises in developing countries. On the other hand, by conducting an empirical study, the findings have brought practical contributions which are valuable recommendations for Vietnamese young firms to sustain their sustainable competitive advantages through enhancing innovation at different levels.

REFERENCES

General Statistics Vietnamese Office (2021) The white paper on Vietnamese enterprises 2021.

Nguyen, T. U. & M. Zainal, S. R. (2016) "Non-State SMEs in Vietnam: Understanding Strategic Situation and Implications for Organizational Performance," in Handbook of Research on Small and Medium Enterprises in Developing Countries. IGI Global.

Breuer, H. & Lüdeke-Freund, F. (2017) "Values-based network and business model innovation," International Journal of Innovation Management, vol. 21, no.3, 1750028, doi: 10.1142/S1363919617500281.

Ferreira, J., Coelho, A., & Moutinho, L. (2020). Dynamic capabilities, creativity and innovation capability and their impact on competitive advantage and firm performance: The moderating role of entrepreneurial orientation. Technovation, 92, 102061

Kim, Y. J. & Vonortas, N. S. (2014) "Cooperation in the formative years: Evidence from small enterprises in Europe," European Management Journal, vol.53, no.5, pp. 795–805. doi: 10.1016/j.emj.2014.02.003.

Anwar, M. & Ali Shah, S. Z. (2020) "Managerial networking and business model innovation: empirical study of new ventures in an emerging economy," Journal of Small Business and Entrepreneurship, vol.32, no.3, pp. 265–286. doi: 10.1080/08276331.2018.1490509.

Brown, J. R., Fazzari, S. M. & Petersen, B. C. (2009) "Published by: Wiley for the American Finance Association Financing Innovation and Growth: Cash Flow, External Equity , and the 1990s R & D Boom," The Journal of Finance, vol.64, no.1, pp. 151–185.

Barney, J. (1991) "Firm Resources and Sustained Competitive Advantage," Journal of Management, 17(1), pp. 99–120. doi: 10.1177/014920639101700108.

Ferreira, J., Coelho, A. and Moutinho, L. (2020) "Dynamic capabilities, creativity and innovation capability and their impact on competitive advantage and firm performance: The moderating role of entrepreneurial," Technovation, vol.92-32, pp.201061. https://doi.org/10.1016/j.technovation.2018.11.004.

Puspita, L. E., Christiananta, B., & Ellitan, L. (2020). The effect of strategic orientation, supply chain capability, innovation capability on competitive advantage and performance of furniture retails. International Journal of Scientific & Technology Research, 9(03), 4521-4529

Maldonado-Guzmán, G., Garza-Reyes, J. A., Pinzón-Castro, S. Y., & Kumar, V. (2018). Innovation capabilities and performance: are they truly linked in SMEs?. International Journal of Innovation Science, 11(1), 48-62

Tidd, J. & Hull, F. M. (2003) "Managing Service Innovation: Variations of Best Practice," Service innovation: organizational responses to technological opportunities and market imperatives, vol.9, pp. 3–34.

Taghizadeh, S. K., Jayaraman, K., Ismail, I., & Rahman, S. A. (2016). Scale development and validation for DART model of value co-creation process on innovation strategy. Journal of Business & Industrial Marketing.

Hull, F. M. & Tidd, J. (2003) "A composite framework of product development and delivery effectiveness in services. In J. Tidd & F.M. Hull (Eds.), Service innovation: Organization responses to technological opportunities & market imperatives," United Kingdom: Imperial College Press, vol.9, pp. 343–371.

Hull, F. M. (2004) "Innovation Strategy and the Impact of a Composite Model of Service Product Development on Performance," Journal of Service Research. Sage PublicationsSage CA: Thousand Oaks, CA, vol.7, no.2, pp. 167–180. doi: 10.1177/1094670504268452.

Tidd, J. and Bessant, J. (2009) Managing innovation: Integrating technological, market and organizational change. 4th edn. West Sussex, UK: John Wiley & Sons, Ltd.

Salunke, S., Weerawardena, J. and McColl-Kennedy, J. R. (2019) "The central role of knowledge integration capability in service innovation-based competitive strategy," Industrial Marketing Management. Elsevier, vol.76, no.8, pp. 144–156. doi: 10.1016/j.indmarman.2018.07.004.

Hair, J. F., Rendolph, C.L., and Chong, A.Y.L., (2017) "An updated and expanded assessment of PLS-SEM in information systems research," Industrial Management & Data Systems, vol.117, no.3, pp. 442-458. https://doi.org/10.1108/IMDS-04-2016-0130

Henseler, J., Ringle, C. M. and Sarsstedt, M. (2015) "A new criterion for assessing discriminant validity in variance-based structural equation modeling," Journal of the Academy of Marketing Science, vol.43, no.1, pp. 115–135.

Hair, J. F. et al. (2014) "Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research," European Business Review. Emerald Group Publishing Ltd., vol.26, no.2, pp. 106–121. doi: 10.1108/EBR-10-2013-0128.