

IJATC 23-6-26

The Innovation Activities of Vietnamese Enterprises: Current Status and Solutions

Quoc Cuong Nguyen^{1,2,#}, Hoang Tuan Nguyen² and HyukDong Kwon³

¹Assistant Professor, Faculty of Technology, Dong Nai Technology University, Dong Nai, Vietnam

²Dong Nai Institute for Innovation, Dong Nai, Vietnam

⁴Professor, Graduate School of NID Fusion Technology, Seoul National University of Science and Technology, Seoul, Korea

E-mail: nguyenquoccuong@dntu.edu.vn

Abstract

Innovation has been considered not only an important factor for creating and maintaining the competitiveness of nations but also a key determinant of enterprises performance in over the world. Innovation is the process by which an enterprise develops new products, services, processes or management systems to meet requirements due to the change of business environment, technology. The results of implementing innovation increase capacity of the business, thereby helping the business to develop sustainably in the face of market trends and competition from competitors. This paper aims to explore the current status of innovation activities as well as proposes solutions to develop innovation activities for Vietnamese enterprises. The proposed solutions in this study paper create a premise to improve the competitiveness and sustainable growth of enterprises in the context of deeper and more comprehensive international economic integration.

Keywords: Innovation, product innovation, innovation activities, Vietnamese enterprises

1. Introduction

Innovation has showcased its importance to the economic development due to its importance and impacts on industrial revolution. Innovation activities are increasingly evaluated as having a positive impact and making important contributions to business results of enterprises. Innovation activities help businesses increase competitive advantages, reduce production costs, increase productivity, and improve employee satisfaction. There are many concepts and definitions of innovation in businesses, but in the most general way, innovation is a systematic change aimed at developing and introducing products and services. breakthrough services to the market to increase sales and profits for businesses. Innovation doesn't have to be a major technological breakthrough or a new business model; Innovation can be as simple as upgrading a company's customer service or features added to an existing product. And no matter how you measure it, true innovation must add value and drive growth. Successful innovation will bring significant net growth to the business. Evidence shows that there are many studies related to evaluating the relationship between innovation activities and business results

Manuscript received: May 6, 2023 / revised: May 16, 2023 / accepted: June 10, 2023

Corresponding Author: tranthihuyen@dntu.edu.vn

Tel: +84-909-449-554

Ph.D, Faculty of Technology, Dong Nai Technology University, Vietnam

of enterprises.

Research by Walker showed that innovation activities have a significant impact on business performance of enterprises [1]. A large number of the case studies [2-5] showed a positive relationship between innovation activities and business performance. The above studies usually only focused on analyzing in general on the nature of innovation activities or assessing a component of innovation activities on the performance of enterprises.

Innovation is an important factor affecting the competitiveness of enterprises and also plays the most important role in sustainable competitive advantage. Damanpour *et al.*, [6-7] pointed out that studies on the impact of innovation activities on business performance often focus on product innovation and process innovation and ignore organizational innovation and marketing innovation or both, while they are both necessary for the growth and effective operation of the business. Relatively few studies mention the influence of organizational innovation and marketing innovation, such as the study of Han [8], Ravichandran [9] and Guan [10] showed that innovative companies focus on management techniques and achieve a higher level of sustainability of business performance. However, Lin and Chen [11] showed that innovation is associated with increased firm revenue; and they argue that organizational innovations, not technological innovations, seem to be the most important factor for total firm revenue. Beside, Johne *et al.* [12] proved that marketing initiatives increase revenue by increasing product consumption and increasing profits for businesses. In addition, Nguyen *et al.* [13] proposed some solutions to more powerfully and effectively promote the growth of startups in the context of the Industry 4.0. Similarly, Nguyen *et al.* [14] presented the solutions to promote Vietnamese creative startup.

Although there are many studies evaluating the impact of innovation on production performance of enterprises, previous studies often focus on innovation in the most general sense or product innovation and process innovation to the results of production and business activities of enterprises. There are not many studies that comprehensively evaluate all aspects of innovation including (product innovation, process innovation, marketing innovation and organizational innovation) to the results of production performance of the enterprise. This paper will focus on analyzing the current status of innovation activities as well as proposes solutions to develop innovation activities for enterprises in Vietnam.

2. Theories and Research Method

2.1 Theoretical background

The types of innovation in companies also vary, in OECD Oslo [15] four types of innovations were introduced, four of which were organizational innovation, process innovation, product innovation and marketing innovation.

+ *Production innovation*

Product innovation is the one that allows a better product to be offer than the ones currently on the market, in the sense that it offers more functions or performs better [15].

+ *Process innovation*

Process innovation is the implementation of new production that makes it easier for the effectiveness of its activities or shipping methods. It may be considered a change in tools, human capital, and work methods or a combination of these such as installing new or better software and to speed up the process of completing work and issuing policies [15].

+ *Marketing innovation*

Marketing innovation is a new marketing method that involves significant changes in product design,

product placement, and promotion or product prices. The main purpose of marketing innovation is to overcome better habits, penetrate new markets or position new company products on the market with the aim of increasing company sales [15]

+ *Organizational innovation*

Organizational innovation is the application of new organizational methods in corporate and organizational business practices or external relations. Organizational innovation is not only to improve company performance by reducing administrative costs and other costs, but to help increase job satisfaction. Activities oriented to organizational change can be consequently influential related to organizational innovation [15].

2.2 Research Methods

The study was conducted based on the results of a survey of 150 enterprises operating in the processing and manufacturing industry in the Southern Key Economic Zone of Vietnam, during the period from January 2021 to December 2022. And the survey is conducted based on 4 innovation factors in the above enterprises. Based on the survey results, we propose some solutions to promote innovation activities for businesses in the integration period.

3. Results

Results of survey of 150 enterprises are showed in Table.1 with 4 factors of innovation in period 2021-2022. The Product innovation is 43,33% in 2021 and increase to 61,33% in 2022 while the rate of non innovation decrease from 56,67% in 2021 to 38,67% in 2022 (Fig.1(a)). Meanwhile, the rate of process innovation is 27,33% in 2021 and increase to 42,67% in 2021 while the rate of non innovation decrease from 72,67% in 2021 to 57,33% in 2022 (Fig.1(b)).

Table 1. Rate of 4 factors of innovation of enterprise in the period 2021-2022

No	Contents	2021	%	2022	%
1	Product innovation	65	43,33	92	61,33
2	Process innovation	41	27,33	64	42,67
3	Organizational and management innovation	37	24,33	62	41,33
4	Marketing innovation	57	38	79	52,67

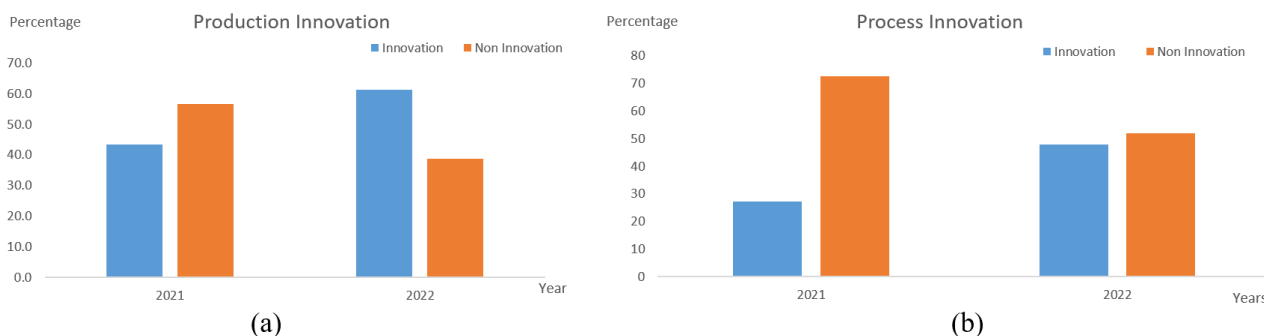


Figure 1. (a) Rate of production innovation and (b) Rate of process innovation in the period 2021-2022

The rate of organizational and management innovation is 24,67% in 2021 and increase to 41,33% in 2022 while the rate of non innovation decrease from 75,33% in 2021 to 58,67% in 2022 (Fig.2(a)). Meanwhile, the rate of marketing innovation is 38% in 2021 and increase to 52,67% in 2022 while the rate of non innovation decrease from 62% in 2021 to 47,33% in 2022 (Fig.2(b)).

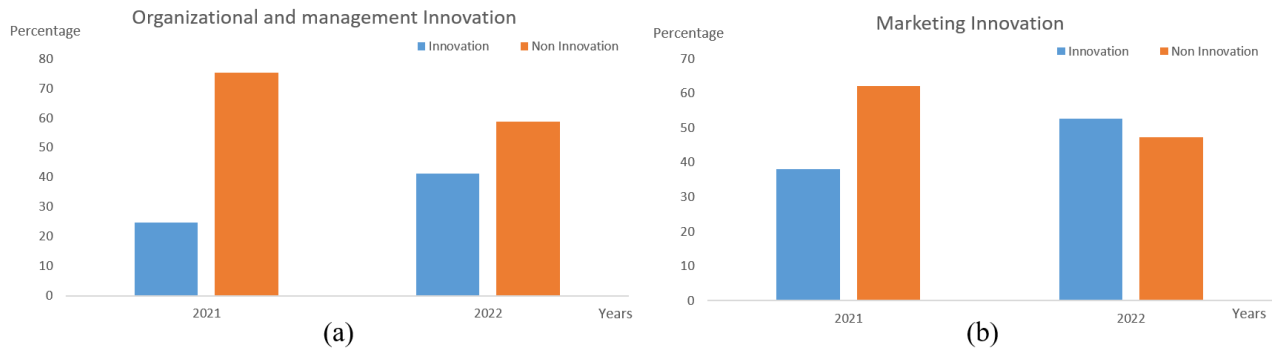


Figure 2. (a) Rate of organizational and management innovation and (b) Rate of marketing innovation in the period 2021-2022

The results show that the rate of product innovation has the highest increase, followed by the rate of organizational and management innovation, process innovation and marketing innovation, respectively. The result of 2 factors (product innovation and process innovation) implement contemporaneously is 22,67% in 2021 and increase to 34,67 in 2022 (Table.2).

Table 2. Rate of 2 factors (product innovation and process innovation) implement contemporaneously

No	Contents	2021	%	2022	%
1	Product Innovation	34	22,67	52	34,67
2	Process Innovation				

Next, the result of 3 factors (product innovation, process innovation and organizational and management innovation) implement contemporaneously is 16,67% in 2021 and increase to 21,33 in 2022 (Table.3).

Table 3. Rate of 3 factors (product innovation, process innovation and organizational and management innovation) implement contemporaneously

No	Contents	2021	%	2022	%
1	Product Innovation	25	16,67	32	21,33
2	Process Innovation				
3	Organizational and management Innovation				

Finally, the result of 4 factors (product innovation, process innovation, organizational and management

innovation and innovation) implement contemporaneously is 12% in 2021 and increase to 17,33 in 2022 (Table.4).

Table 3. Rate of 4 factors (product innovation, process innovation, organizational and management innovation and marketing innovation) implement contemporaneously

No	Contents	2021	%	2022	%
1	Product Innovation	17	11,33	26	17,33
2	Process Innovation				
3	Organizational and management Innovation				
4	Marketing Innovation				

The results showed that rate of 4 factors implement contemporaneously is quite low and it shows that comprehensive innovation activities in enterprises have not been significantly implemented.

In the other hand, there are factors and causes that prevent enterprises from implementing innovation. The study surveyed enterprises to assess the impact of the main reasons that prevented enterprises from implementing innovation activities. The degree of influence of the causes was scored as follows: 0 = not relevant, 1 = less relevant, 2 = fairly relevant, 3 = very relevant, and 4 = strongly relevant. Figure.3 depicts the average score to evaluate the influence of the factors prevent innovation activities. It is possible to arrange 05 basic causes of hindrance from high to low as follows: the highest is “1. The cost of technological innovation is too high” (3.24 points); followed by “2. Lack of qualified human resources to be able to participate in and implement technological innovation activities” (2.85 points); ranked third is “3. Lack of really attractive incentives and support policies from the government” (2.32 points); fourth is “4. The expected innovation profit is not as high as expected” (1.78 points); and ranked last as “5. Do not know about innovative activities suitable to the business field of enterprises” (1,24 points).

The survey results show that the biggest barrier to innovation activities of enterprises is “The cost of technological innovation is too high”, followed by “Lack of qualified human resources to be able to participate in and implement innovation activities”; the lowest is “Do not know about innovative activities suitable to the business field of the enterprise”.

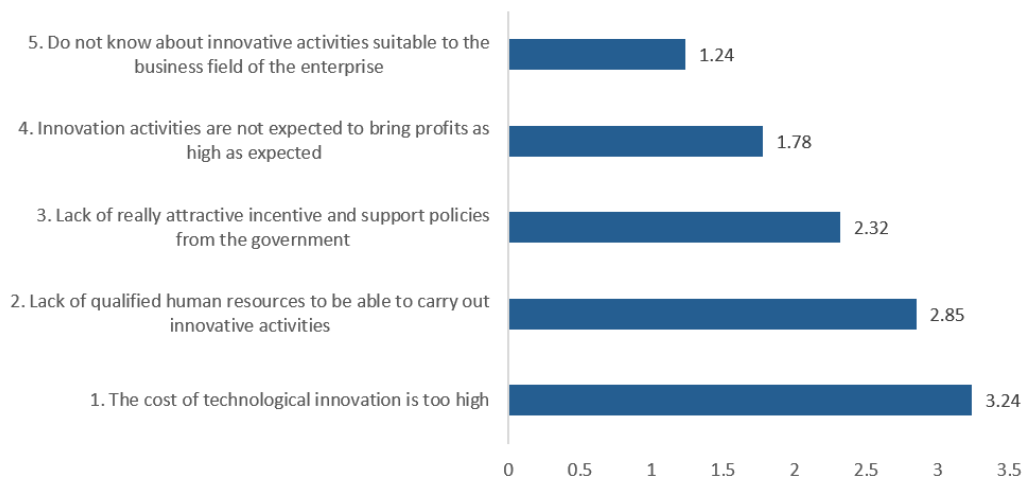


Figure 3. Average score of enterprises on the level of the main reasons hindering innovation activities

3. Solutions for promote to innovation activities of Vietnamese enterprises

From the above survey results, some solutions to promote innovation activities in enterprises are proposed as follows:

3.1 Application of the triple helix model for innovation activities in Vietnam

In order to promote innovations of enterprise, this study proposes the triple helix model to be applied in Vietnam (Figure. 4). In this figure, the triple helix model is based on “collaboration environment” with the participation of stakeholders can be interpreted as follows:

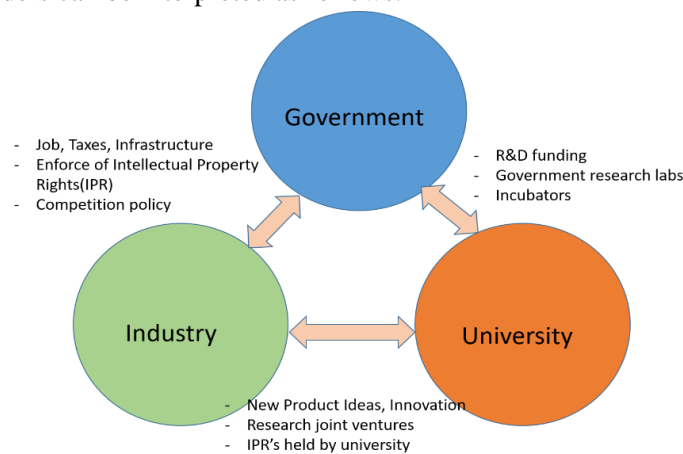


Figure. 6. Suggestion of Triple Helix Model of Vietnam Innovation system

Firstly, Government- Industry linkage: Government with coordinating role are to create the favorable environment through legal tools, administrative structures and intellectual property law, Competition policy.

Secondly, Government- University linkage: Government with supporting role are to create the government research labs, incubator.

Thirdly, University - Industry linkage: The policy framework for encouraging university–industry cooperation is still largely shaped by the Law on Technology Transfer adopted in 2017 [16].

Finally, facilitate knowledge exchanges between universities, government research institutions, and industry by providing universities with greater autonomy in establishing relations with partners as well as promoting associations and forums for knowledge exchange and collaboration.

3.2 Financial policies to support innovation enterprise development

The Vietnam government need focus on providing technological innovation support for business, given that science and technology play an important role in business development, product quality enhancement, and improving competitiveness. In order to deploy this policy, The National Technology Innovation Fund (NATIF) was founded by the Decision No. 1342/QĐ-TTg, dated August 11, 2015 of Prime Minister on establishing National Technology Innovation Fund. Roles of the NATIF is mainly to support enterprises, organizations and individuals whose conduct activities to innovative technology applications, commercializing the results of scientific research and technological development to bring to the market new products and services that have high technological content and high added value. In addition, it is necessary to study additionally and improve

credit policies for businesses to be able to support businesses in technological innovation more effectively, as the government needs to have some orientations to focus on improve the technology of enterprises, especially in priority fields and industries.

3.3 Legal Policies to support for enterprises

In 2016, the Vietnam's Prime Minister approved the "Supporting National Innovative Start-up Ecosystem to 2025" through Decision 844/QĐ-TTg/2016 [17]. It focuses on supporting the national innovation startup ecosystem through 2025 and developing a legal system and a national e-portal for startups by 2020. In addition, in January 2018, the Law on Supporting Small and Medium-Sized Enterprises came into effect, with detailed provisions for support to start-ups in areas such as technology transfer, training, trade promotion, investments, preferential loans, and incentives for venture capital funds.

In the other hand, the Vietnam Government issued the Decree No. 13/2019/ND-CP dated on February 01st, 2019 on science and technology enterprises [18]. The science and technology enterprises (S&T Enterprises) means an enterprise implementing production and business science and technology service to make a goods or product from results of science research and technology development. In order to promote the commercialization of science and technology results, the Vietnam Government supports the S&T Enterprises through policies on enjoying import and export tax; use of research equipment in national key laboratories, technology incubators...

In addition, creating favorable conditions and environment for healthy competition in production and business, thereby encouraging enterprises to promote innovation activities to improve the technology level of enterprises. Because in a healthy competitive environment, the industrial property rights on innovation results of enterprises are better guaranteed, therefore, enterprises want to promote innovation even more. In fact, innovation activities contribute to improving the technology level of enterprises and conversely, the higher the technological level of the group of enterprises, the more innovative enterprises in that group.

Furthermore, there should be specific policies to support product innovation, especially for new products and new technological processes (from R&D to marketing and bringing products to market). In particular, it is necessary to research and perfect policies so that enterprises, gradually, have the capacity to create many new products. This policy can be credit support policy, support technology innovation; but more attention is needed to be able to mobilize the forces of experts, scientists to provide technical advice to enterprises or to innovate science and technology programs into targeted programs to support innovation enterprises. Beside, promoting R&D activities and invest in technological innovation in enterprises and support the results of these activities, as well as the purchase of intellectual property, to take effect in production and business of enterprises.

Lastly, supporting and encouraging innovation culture in enterprises to create an enthusiastic creative environment, respect intellectual property rights, and encourage the creation of unique products of each enterprise. It is necessary to promote the development of an innovation culture in a healthy competitive environment. Society has the right awareness and proper assessment of innovation activities of enterprises; have appropriate policies to promote the spread and development of innovation culture.

4. Conclusion

Under the impact of the industrial revolution 4.0, with the foundation of digital transformation has opened up a digital economy full of opportunities and challenges for organizations and SME enterprises. In Vietnam, science, technology and innovation have become an important content in the national economic development strategy, with the attention and support of the Vietnam Government so that improve the

competitiveness of enterprises. This study has analyzed the current status and proposed some solutions to develop the innovation activities of Vietnamese enterprises. The results of the study show that the product innovation variable has a positive effect on innovation performance. In addition, the results show that the biggest barrier impact to innovation activities of enterprises is the cost of technological innovation is too high. This result is the basis for government agencies to have timely policies to support innovation activities in enterprises. However, the survey of enterprises in this study is still limited, so it is not possible to comprehensively assess the difficulties for innovation activities at enterprises. It is necessary to survey more businesses to assess overall the main barriers in the process of implementing innovation at enterprises in order to have effective support policies.

Acknowledgement

This work was supported by Dong Nai Technology University Research Fund in 2022.

Reference

- [1] R.M. Walker, "An empirical evaluation of innovation types and organizational and environmental characteristics: towards a configuration framework", *Journal of Public Administration Research and Theory*, Vol.18, No.4, pp. 591-615, 2008. DOI: <https://doi.org/10.1093/jopart/mum026>
- [2] C.A. Olson, A. Schwab, "The performance effects of human resource practices: The case of interclub networks in professional baseball, 1991-1940", *Industrial Relations*, Vol. 39, Issue. 4, pp. 553-577, 2000. DOI: <https://doi.org/10.1111/0019-8676.00184>
- [3] R.J. Calantone, S.T. Cavusgil and Y. Zhao, "Learning orientation, firm innovation capability, and firm performance", *Industrial Marketing Management*, Vol. 31, Issue. 6, pp. 515-524, 2002. DOI: [https://doi.org/10.1016/S0019-8501\(01\)00203-6](https://doi.org/10.1016/S0019-8501(01)00203-6)
- [4] V.K. Garg, B.A. Walters, R.L. Priem, "Chief executive scanning emphases, environmental dynamism, and manufacturing firm performance", *Strategic Management Journal*, Vol. 24, Issue.8, pp. 725-744, 2003. DOI: <https://doi.org/10.1002/smj.335>
- [5] F. Wu, V. Mahajan, S. Balasujbramanian, "An analysis of e-business adoption and its impact on business performance", *Journal of the Academy of Marketing Sciences*, Vol. 31, Issue.4, pp. 425-447, 2003. DOI: <https://doi.org/10.1177/0092070303255379>
- [6] F. Damanpour, W.M. Evan, "Organizational innovation and performance: The problem of "organizational lag"", *Administrative Science Quarterly*, Vol. 29, No. 3, pp. 392-409, 1984. DOI: <https://doi.org/10.2307/2393031>
- [7] F. Damanpour, "Organizational innovation: a meta-analysis of effects of determinants and moderators", *Academy of Management Journal*, Vol. 34, No. 3, pp. 555-590, 1991. DOI: <https://doi.org/10.5465/256406>
- [8] J.K. Han, N. Kim, R.K. Srivastava, "Market orientation and organizational performance: Is innovation the missing link?", *Journal of Marketing*, Vol. 62, Issue. 4, pp. 30-45, 1998. DOI: <https://doi.org/10.1177/002224299806200403>
- [9] T. Ravichandran, "Swiftness and intensity of administrative innovation adoption: An empirical study of TQM in information systems", *Decision Sciences*, Vol. 31, No. 3, pp. 691-724, 2000. DOI: <https://doi.org/10.1111/j.1540-5915.2000.tb00939.x>
- [10] J. Guan, N. Ma, "Innovative capability and export performance of Chinese firms", *Technovation*, Vol. 23,

Issue. 9, pp. 37-747, 2003.

DOI: [https://doi.org/10.1016/S0166-4972\(02\)00013-5](https://doi.org/10.1016/S0166-4972(02)00013-5)

- [11] C.Y. Lin, M.Y. Chen, “Does innovation lead to performance? An empirical study of SMEs in Taiwan” *Management Research News*, Vol. 30, Issue. 2, pp. 115-132, 2007.
DOI: <http://dx.doi.org/10.1108/01409170710722955>
- [12] A. Johne, R. Davies, “Innovation in medium-sized insurance companies: How marketing adds value” *International Journal of Bank Marketing*, Vol. 18, No. 1, pp. 6-14, 2000.
DOI: <https://doi.org/10.1108/02652320010315316>
- [13] Q. C. Nguyen, T. H. Tran, and H. Kwon, “Development of Startup Ecosystem in Vietnam in the Context of the Fourth Industrial Revolution.” *International Journal of Advanced Smart Convergence*, Vol. 9, No. 2, pp. 76–83, June 2020.
DOI: <https://doi.org/10.7236/IJASC.2020.9.2.76>
- [14] Q. C. Nguyen, T. H. Tran, Q.K. Nguyen and H.D. Kwon, “Current Status and Solutions for Promoting Innovative Startup in Vietnam” *International Journal of Advanced Smart Convergence*, Vol. 10, No. 3, pp. 76–83, 2020.
DOI: <https://dx.doi.org/10.7236/IJASC.2021.10.3.97>
- [15] OECD, “Oslo manual: Guidelines for collecting and interpreting innovation data (3rd ed.). Luxembourg” OECD Publishing, 2005.
- [16] The Vietnam National assembly, “Law on Technology Transfer”, 2014.
- [17] Decision 844/QĐ-TTg of Vietnam Prime Minister, “Supporting National Innovative Start-up Ecosystem to 2025”, 2016.
- [18] Decree No. 13/2019/ND-CP of Vietnamese Government “Science and Technology Enterprises”, 2019.