

Evaluating the Innovation Activities of Vietnamese Enterprises: Evidence from Binh Dinh Province

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Innovation plays an important role in increasing the competitiveness, and sustainable development of the enterprises. This study aims to evaluate the status of innovation activities in enterprises and propose policies to improve business performance by analysing the statistical description data from 200 enterprises surveyed in Binh Dinh. We evaluate the innovation activities in five aspects: product innovation, production process innovation, management organisation innovation, marketing innovation, and technology innovation. The results show that most enterprises are less likely to invest in innovation, with the average score being 'moderate'. Specifically, while the score of marketing innovation is 'highly moderate', it is also quite low for technology innovation. The average scores of product innovation, production innovation, and management organisation innovation are 'moderate'. This study also discussed, and proposed solutions supporting innovation activities for businesses in terms of the product, production process, management, marketing, and technology.

Key words: *Innovation, Innovation status, Enterprise, Binh dinh.*

Introduction

This study is in the project funded by the Binh Dinh People's Committee. The project is coded 10-05-2018, and concerns assessing the innovation status in the enterprises in Binh Dinh and proposing oriented improvement solutions for sustainable development.

In order to produce this research, the authors conducted a survey with a sample of 200 enterprises in the Binh Dinh Province. Two-hundred questionnaires were delivered, and 200 valid responses were collected, at a perfect take-up rate of 100 per cent.

There are different definitions, and perspectives about ‘enterprise innovation’, which depends on the viewpoint of innovation. According to the Organisation for Economic Cooperation and Development (OECD, 2005), innovation is the implementation of a product, commodity, service, a new or significantly updated production process, a new marketing strategy, new organisation structure in operation, or an external relation.

In Vietnam, according to the Vietnam Chamber of Commerce and Industry (VCCI, 2011), innovation is something new that is used in commerce. In the innovation process, creativity, and implementation are often combined together, including product, production process, and organisation.

De Jong and Brouwwer (1999) believe that innovation is the successful development, application, and improvement in products, services, technology, working processes or market conditions to achieve a competitive advantage. According to Afuah (2003), innovation is the use of technology, and market knowledge to provide new products, and services, satisfying the needs of customers.

The OECD (2005) states that there are four different types of innovation, specifically:

First of all, product innovation is the intervention of new products or the significant improvement of existing products in terms of the operation features or usages, such as technical standards, components, materials, software, and environmental friendliness. The product innovation includes the product design (Schumpeter, 1949; Romijn & Albaladejo, 2002), technology (Hage, 1999), properties (Romijn & Albaladejo, 2002; Assink, 2006; Dibrell et al., 2008), and operation environment (Dibrell et al., 2008).

Secondly, manufacturing process innovation includes the fundamental changes in the way of production, machinery or software. The process innovations can be conducted in order to reduce cost in production and distribution, improve quality, and create new or improved products. The production process innovation can be the implementation a new design process or experimental methodology (Acs & Audretch, 1988; Singh, et al., 2009; Amara et al., 2009; Jensen & Webster, 2009).

Thirdly, innovation in marketing is creating the new ideas in marketing strategy, which aims to create the new fashions, and design change. It can also be the innovation in distribution channels, promotion, and pricing to identify customers. Moreover, the market innovation is searching for a new market; extending the existing market, which aims to attract more customers; allocate the new position for products; and increase revenue. In general, the market innovation includes developing new market opportunities, changes to the introduction

context of products to market, and implementing new marketing strategies (Singh & Singh, 2009; Jensen & Webster, 2009).

Fourthly, innovation in management is the adoption of new management, and organisation methods, which aim to increase business efficiency. By reducing the cost of transactions, and administrative expenses, and improving external relationships, it is expected that the organisation innovation can broaden knowledge for managers, increase productivity, and the efficiency of workers. The organisation innovation includes the changes in organisation structure, responsibility for management, corporation governance, management in the financial system, and salary system for workers (Hage, 1999; Jensen & Webster, 2009; McMillan, 2010).

Chandy and Tellis (1998) consider enterprise innovation is the technology innovation. This innovation includes changing, and innovating the existing technology, which bring benefits, and satisfaction for customers. It can also be the application of totally new technical inventions to increase the productivity (Herrmann et al., 2006, McMillan, 2010).

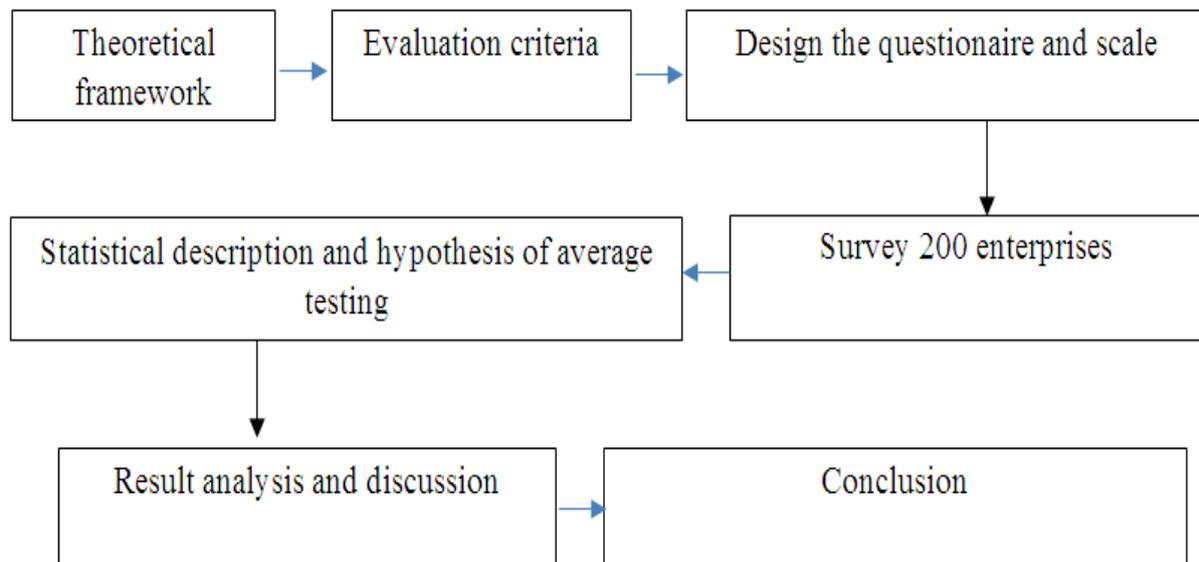
Generally, innovation is evaluated in different perspectives. In this study, the authors focus on assessing the innovation in enterprises in Binh Dinh, and in five aspects: product innovation, production process innovation, innovation in management organisation, marketing innovation, and technology innovation. The structure of this study includes five sections. The second section is about the methodology, including the study process, data collection, and an explanation about the variables and scale, and questionnaire. The third section is about the study result, and discussion. The fourth section is about the solutions, and policies to improve innovation performance in the enterprises, while the last part is a conclusion of the study, limitations, and further study.

Methodology

Study Process

This study is conducted by the following study process, shown in Figure 1.

Figure 1. Study process



Source: Authors' summary

Data Collection

The authors used a qualitative methodology for this study, which is outlined as follows. Firstly, an in-depth interview was conducted regarding the research issues, and developed research content. We conducted the in-depth interview via the unstructured questions with the experts, and managers of the enterprises in Binh Dinh, such as the Board of Directors, Director, Head of Department, and so on. Besides that, the authors also used the meta-analysis methodology, and survey methodology to comprehend the theoretical, and empirical issues.

Secondly, was data collection. We used both primary data, and secondary data for this study. The primary data comprised the survey, of which 200 were distributed to enterprises in Binh Dinh. For the secondary data, we collected and complied circulars, regulations, rules of operation and organisation, and reports and forecasts related to innovation from local enterprises, and the Binh Dinh People's Committee. We also referred to the textbooks, publications, and other materials related to this study.

Thirdly, we conducted the survey. After being instructed on the survey approach, the interviewers, who had a recommendation letter from the Host Agency, went to each enterprise to conduct the interviews, and survey. In order to make sure the sample is representative, the enterprises surveyed had to satisfy the following requirements:

1. The enterprises operate in three different sectors:
 - (i) Industry and construction
 - (ii) Trade and service
 - (iii) Agriculture, forestry, and fishery under the Government Decree No. 32/2018/ND-CP
2. They have legal forms of the joint stock company, limited liability company, private company, etc.
3. They are located in different areas from the delta, mountains, and city.
4. The sample includes enterprises inside the industrial parks, industrial zones, and outside these regions.

Data Processing Methodology

A total of 200 valid samples were collected which fulfilled the answers for all questions in the questionnaire. After collecting all the data, the authors transferred the information into the computer program, Excel, by coding the answer for each variable by each part, and group of questions in the questionnaire. We then imported the data into the SPSS 22.0 program. The dataset includes 200 observations, and the information needed, which is analysed in the third part of this study.

We utilised two main tools: sample statistics, and statistical description to process, and analyse the dataset. The sample statistics enables the ability to summarise and calculate the percentage rate of the sample by an evaluation criterion, and classification. The statistical description, and hypothesis of mean testing is used to test the average value of each criterion about the evaluation. The hypothesis of the mean testing is comparing the evaluated score to the average score of three, to examine the evaluation level of each criteria in practice.

Explanation of Variables and Scale

We used the Likert scale for the answers in the questionnaire with: '1' being 'very low', '2' being 'low', '3' being 'moderate', '4' being 'high', and '5' being 'very high'. Attention was paid to analyse the innovation in five aspects: product, production process, management organisation, marketing, and technology. The variables, and scale are defined, as follows:

Table 1: Variables and scale

No.	Scale	Variables	Code	Source
1	Product innovation (DMSP)	The enterprise launches new product in the market before competitors.	DMSP1	Authors' proposition that refers to previous studies: OECD (2005); Schumpeter (1949); Romijn & Albaladejo (2002); Hage (1999); Assink (2006); Dibrell et al. (2008); Arsen et al. (2020); expert interview.
		The enterprise creates new product that has never been produced by the company.	DMSP2	
		The enterprise often creates additional new products to the existing products.	DMSP3	
		The enterprise often improves the design of products.	DMSP4	
		The enterprise often improves the quality of products.	DMSP5	
		The enterprise often improves the usage features of products.	DMSP6	
		The enterprise often improves the products oriented to the input changes.	DMSP7	
		The enterprise often improves the products oriented to the application of new knowledge and technology.	DMSP8	
		The enterprise often creates the products that are suitable to consumer's reference.	DMSP9	
		The enterprise often updates the quality standards for products.	DMSP10	
2	Production process innovation (DMQT)	The enterprise often innovates the production methodology.	DMQT1	Authors proposition that refers to previous studies: OECD (2005); Acs & Audretch (1988); Singh & Singh (2009); Amara et al. (2009); Jensen & Webster (2009); expert interview
		The enterprise often has significant improvement or new application in input and materials provision.	DMQT2	
		The enterprise often improves in product distribution.	DMQT3	
		The enterprise often updates the production management methodology.	DMQT4	
		The enterprise often applies the updated software and technology in the production process.	DMQT5	
		The enterprise periodically innovates the production equipment.	DMQT6	
		The enterprise often updates the modern production process.	DMQT7	

3	Management organisation on innovation (DMQL)	The enterprise usually innovates and adjusts the organisation structure to improve the management efficiency.	DMQL1	Authors proposition that refers to previous studies: OECD (2005); Singh & Singh (2009); Jensen & Webster (2009); expert interview
		The enterprise usually implements the new administration approach (i.e. supply chain management, operation model, knowledge management).	DMQL2	
		The enterprise often applies the new methodology in personnel organisation, human management, and decision-making.	DMQL3	
		The enterprise usually applies the modern applications to enhance the relationships with other organisations and companies.	DMQL4	
		The enterprise often applies the quality management system and innovates in operation.	DMQL5	
		The enterprise often shares knowledge within internal departments.	DMQL6	
		The enterprise applies the decentralised system in the management decisions.	DMQL7	
		The enterprise is concerned about developing the connection network in the value chain of the sector.	DMQL8	
		The enterprise usually pays attention to improve the capacity and specialist skills of managers.	DMQL9	
4	Marketing innovation (DMMAR)	The enterprise usually applies new techniques to promote sales.	DMMAR 1	Authors' proposition that refers to previous studies: OECD (2005); Hage (1999); Jensen & Webster (2009); McMillan (2010); expert interview.
		The enterprise usually applies the new means of communications to advertise the products and/or services.	DMMAR 2	
		The enterprise often innovates the channels in sales or product distribution.	DMMAR 3	
		The enterprise usually applies new approaches in product and/or service pricing.	DMMAR 4	
		The enterprise usually updates the new trend in market and consumers' reference.	DMMAR 5	

		The enterprise usually updates the efficient sales approach based on the customer's feedback.	DMMAR 6	
		The enterprise is usually concerned about the relative product price to the competitors.	DMMAR 7	
5	Technology innovation (DMCN)	The enterprise often pays attention to the investment in research and development activities.	DMCN1	Authors proposition that refers to previous studies: Afuah (2003); Chandy & Tellis (1998); Herrmann et al. (2006); McMillan (2010); expert interview
		The enterprise often updates the new production technology and serving approach.	DMCN2	
		The enterprise is concerned about establishing the fund for technological and scientific development.	DMCN3	
		The enterprise is concerned about investing in the new and modern technology.	DMCN4	
		The enterprise applies the modern technology which is suitable for the working skills and capacity of workers.	DMCN5	
		The enterprise exploits the equipment's capacity efficiently.	DMCN6	
		The enterprise focusses on applying technology in the production process.	DMCN7	
		The enterprise often pays attention to applying the friendly environment technology.	DMCN8	

Source: Authors' summarisation from the questionnaire

Questionnaire Design

In order to collect data for this study, we used a questionnaire that is designed with the variables, and scale defined. The survey form was designed through three different stages:

Stage 1: Design the draft survey form.

This stage referred to the existing studies about innovation in enterprise, in both Vietnam, and other countries, and we generalised, and identified the research gap. Subsequently, based on the theory of innovation, and preliminary actual figures about the innovation in the

enterprises in Binh Dinh, we developed the draft questionnaire. This questionnaire includes two different components: general information about the enterprise, and survey information.

Stage 2: Consult with the experts and conduct the pre-test survey to complete the plans, criteria, and questions.

In this stage, we conducted a direct interview with the experts, who were professors at university, managers in research institutes, members of the Board of Directors, Directors, and Heads of Department in the enterprises in Binh Dinh. There were a total of 20 interviewees, and 20 enterprises in this pre-test. In this stage, we asked questions related to the draft questionnaires, which were designed in stage one, and discussed the research ideas with the experts. We also consulted the experts, and specialist managers about the questionnaires, including whether it was suitable with the enterprise, and locality status or if there were any adjustments or complements needed to correct the criteria and/or questions, in order to be appropriate to the innovation status in the local enterprises.

Stage 3: Design the official questionnaire.

Based on the comments, and feedback in the second phase, we combined, and adjusted the questions. In order to improve the efficiency, accuracy, and feasibility of the survey, we organised the first workshop to present the results of expert interviews, the pre-test survey, and the corrected questionnaires. We also hoped to continue receiving more comments from the experts, consumers, and enterprises, which would enable continued improvement of the official questionnaire, as best as possible.

Study Result and Discussion

Innovation in Product

Through the expert interview, and testing survey in several enterprises in Binh Dinh, we defined ten criterion to assess the status of product innovation in the enterprises. The result is, as follows:

Table 2: Status of product innovation in enterprises

Variable	Content of criteria	Mean	Max.	Min.	Standard error
DMSP1	The enterprise launches new product in the market before the competitors.	3.105	4.000	1.000	0.753
DMSP2	The enterprise creates new product that has never been produced by the company.	3.010	4.000	1.000	1.047
DMSP3	The enterprise often creates additional new products to the existing products.	3.060	4.000	1.000	0.889
DMSP4	The enterprise often improves the design of products.	2.785	4.000	1.000	0.929
DMSP5	The enterprise often improves the quality of products.	3.160	4.000	1.000	0.753
DMSP6	The enterprise often improves the usage features of products.	3.190	4.000	1.000	0.753
DMSP7	The enterprise often improves the products oriented to the input changes.	3.370	4.000	1.000	0.652
DMSP8	The enterprise often improves the products oriented to the application of new knowledge and technology.	3.115	4.000	1.000	0.816
DMSP9	The enterprise often creates the products that are suitable to consumer's reference.	3.100	4.000	1.000	0.821
DMSP10	The enterprise often updates the quality standards for products.	3.100	4.000	1.000	0.814

Source: Authors' calculation from survey results

From the statistical description, it is shown that most of the enterprises do not really invest in the product innovation, with the average score ranging from 2.785 to 3.37. In particular, innovation in the product design has the lowest average score, with only 2.785. Meanwhile, the introduction of a new product that companies have never produced before is also relatively low, with a score of 3.010. The score of creating additional or supplementary new products or features to the existing products also has a low mean score, at 3.06. The remainder of the criterion also have quite low scores, sitting at around or above three. The result shows that the product innovation, in terms of new product creation, and the existing improvement, is still limited. The firms have not focussed on the product investment, and development.

Innovation in the Production Process

Innovation in the production process is one of the most important innovation activities in any enterprise. All companies want to increase profit, which can be done through an increase in their revenue or reduce the production costs. Investing in the production process in innovation allows companies to improve their operation efficiency, and capacity, and reduce the production costs. Accordingly, they become more flexible to adapt to the business environment. The expert interviews, and pre-test survey conducted in the enterprises in Binh Dinh allows us to identify seven criteria, which assess the status of the production process innovation in enterprises. The result of the official survey is, as follows:

Table 3: Status of production process innovation

Variable	Content of variable	Mean	Max.	Min.	Standard Error
DMQT1	The enterprise often innovates the production methodology.	2.655	5.000	1.000	0.720
DMQT2	The enterprise often has a significant improvement or new application in the input and materials provision.	3.155	5.000	2.000	0.688
DMQT3	The enterprise often improves in product delivery.	3.465	5.000	2.000	0.820
DMQT4	The enterprise often updates the production management methodology.	3.140	5.000	2.000	0.680
DMQT5	The enterprise often applies the updated software and technology in the production process.	3.080	5.000	2.000	0.785
DMQT6	The enterprise periodically innovates the production equipment.	3.140	5.000	1.000	0.897
DMQT7	The enterprise often updates the modern production process.	2.860	5.000	1.000	0.783

Source: Authors' calculation from survey results

The result shows that the enterprises tend to innovate their product delivery, with a relatively high average score of 3.465. The innovation in terms of the transportation, and production management periodical update in the equipment is evaluated in the 'average' range, specifically between 3.080 to 3.155. On the other hand, the average score in innovation in the production methodology, and updating the modern production process is lower than the moderate level of three, at 2.655, and 2.860, respectively. This result implies that the innovation in the production process is quite underestimated, especially the innovation in the production methodology, and updating the production process through modernisation.

Innovation in the Management Organisation

Innovation in the management organisation includes innovation activities in the organisation structure, administration, human management, and relationships with other organisations, and companies. Through the expert interviews, and pre-test survey conducted in the enterprises in Binh Dinh, we identified nine criterion, which evaluate the status of the innovation in management in the enterprises.

Table 4: Status in management organisation innovation

Variable	Content of variable	Mean	Max.	Min.	Standard error.
DMQL1	The enterprise usually innovates and adjusts the organisation structure to improve the management efficiency.	3.030	5.000	1.000	0.856
DMQL2	The enterprise usually implements new administration approaches, including in supply chain management, operation model, and knowledge management.	2.965	5.000	1.000	0.937
DMQL3	The enterprise often applies the new methodology in personnel organisation, human management and decision-making.	3.075	5.000	1.000	0.802
DMQL4	The enterprise usually applies modern applications to enhance the external relationships with other organisations and companies.	3.255	5.000	1.000	0.839
DMQL5	The enterprise often applies the quality management system and innovates in its operation.	2.950	5.000	1.000	0.890
DMQL6	The enterprise often shares knowledge within the internal organisation.	3.090	5.000	1.000	0.797
DMQL7	The enterprise applies the decentralised system in management decision-making.	3.300	5.000	1.000	0.897
DMQL8	The enterprise is concerned about developing the connection network in the value chain of the sector.	2.975	5.000	1.000	0.921
DMQL9	The enterprise usually pays attention to improve the capacity and specialist skills of managers.	3.460	5.000	1.000	0.838

Source: Authors' calculation from survey results

It is shown, that among the criterion about organisation innovation, most of the enterprises pay attention to improving the capacity, and specialist skills of managers, with the highest average score of 3.46. This was followed by the application of a decentralised system in decision-making, and improvement in the channels to extend the relationships with other organisations, with 3.300, and 3.255, respectively. Several other criterion was evaluated at the moderate level, and just above the value of three. For example, the adjustment of the organisation structure improves the management efficiency, obtained a value of 3.030; the application of new methodology in personnel organisation, human management, and decision-making obtained a value of 3.075; and shares knowledge within the internal organisation obtained a value of 3.090. On the other hand, several factors had an average score below the average of three, including: developing the connection network in the value chain of the operation sector, with a value of 2.950; implementing new administration approaches, including in the supply chain management, operation model, and knowledge management; and applying the quality management system, and operation innovation, with 2.965, and 2.950, respectively. The result is consistent with the reality in the Vietnam enterprises, that they are aware of the important role of leaders, and the management structure in a company. Every year, companies spend a designated budget to improve leadership skills, and specialist knowledge. It could be due to the limited budget, but the small, and medium enterprises are less likely to reform in the administration structure, quality system, and invest in the connection network with other companies in the value chains of the industries in which they operate.

Innovation in Marketing

Innovation in marketing is presented in product pricing, sales promotion, distribution channel creation, and customer services. By interviewing the experts, and conducting the preliminary survey, we constructed seven criterion to assess the status of the marketing innovation in the enterprises in Binh Dinh. The results of the official survey is, as follows:

Table 5: Status of marketing innovation in the enterprises

Variable	Content of variable	Mean	Max.	Min.	Standard error.
DMMAR1	The enterprise usually applies new techniques to promote sales.	3.155	5.000	2.000	1.076
DMMAR2	The enterprise usually applies the new means of communications to advertise products and services.	3.940	5.000	2.000	0.824
DMMAR3	The enterprise often innovates the channels in sales or product distribution.	3.400	5.000	2.000	0.880

DMMAR4	The enterprise usually applies new approaches in product and service pricing.	3.425	5.000	2.000	1.010
DMMAR5	The enterprise usually updates the new trends in the market and consumers' reference.	3.475	5.000	2.000	0.982
DMMAR6	The enterprise usually updates the efficient sale approach based on the customer's feedback.	3.505	5.000	2.000	0.956
DMMAR7	The enterprise is usually concerned about the relative product price to the competitors.	3.490	5.000	2.000	0.845

Source: Authors' calculation from survey results

From the above table, compared to the other innovation activities, the enterprises in Binh Dinh are more concerned about the innovation in marketing, with the average score ranging between 3.155 and 3.94. The companies not only use the traditional forms of advertisement, but often upgrade the means of communication with customers, such as constructing a separate selling website, and online advertising, which attains a relatively high average score of 3.94. The companies also change the selling channel to improve the sales revenues, and satisfy the customers' demands. The average score is given at 3.505. On the other hand, several other criterion in the innovation in marketing were just above the moderate level of three, including: applying new techniques to promote sales at 3.155, and innovating the channels in sales, and product distribution at 3.4. These scores demonstrated that most of the enterprises in Binh Dinh tend to invest more in the innovation in marketing. It is suggested that they should improve the existing sales, and distribution channels, creating new product delivery channels by applying a modern technology methodology.

Innovation in Technology

The innovation in technology is one of the most important innovative aspects in companies, in the modern technology progress era. The application of modern technology in the production, and management in a company is considered the important background, which allows the enterprises to improve the quality product, diversify products, increase productivity, and use materials efficiently. This leads enterprises to have higher competitive advantages compared to their competitors, extend their market, and increase their business efficiency. From the results of the expert interviews, and pre-test survey in the enterprises in Binh Dinh, we defined eight criterion to evaluate the status in technology innovation, which is shown as follows:

Table 6: Status of technology innovation

Variable	Content of variable	Mean	Max.	Min.	Standard error.
DMCN1	The enterprise often pays attention to the investment in research and development activities.	2.710	5.000	1.000	0.761
DMCN2	The enterprise often updates the new production technology and serving approach.	2.720	5.000	1.000	0.797
DMCN3	The enterprise is concerned about establishing the fund for technological and scientific development.	2.540	5.000	1.000	0.742
DMCN4	The enterprise is concerned about investing in the new and modern technology.	2.985	5.000	1.000	0.780
DMCN5	The enterprise applies the modern technology, which is suitable for the working skills and capacity of workers.	2.780	5.000	1.000	0.790
DMCN6	The enterprise exploits the equipment's capacity efficiently.	3.080	5.000	1.000	0.753
DMCN7	The enterprise focusses on applying technology in the production process.	2.895	5.000	1.000	0.719
DMCN8	The enterprise often pays attention to applying the friendly environment technology.	2.920	5.000	1.000	0.759

Source: Authors' calculation from survey results

The average score of the criterion of technology innovation tends to be underestimated with a majority below the moderate level of three, except for the criteria of exploiting the capacity of equipment efficiently, with a score of 3.080. The range of the average score was between 2.54 to 2.985. This may result from the fact that most of the enterprises are small, and medium-sized with a limited budget, while technology investment often requires a large amount of funding. Another reason could be that the companies underestimate the role of technology innovation.

Proposing Solutions for Improving Innovation in Enterprise ***Product Innovation***

In order to improve product innovation, enterprises can undertake several of the following tasks:



Firstly, enterprises need to invest more in product research, and development. Specifically, the sales department should be aware of changes in the customers, and trends in the market. It allows companies to create new products, and innovate the existing commodities, and diversify their customers. For example, Banh It La Gai, the traditional sticky cake in Binh Dinh, has been selected as one of the typical dishes of the Province, and is displayed in the supermarkets, and exported to United States, and Japan. For this product to be successful in international markets, it is essential to understand the taste of local consumers, and the trends of these markets.

Updating the customer reference is another crucial thing that companies should consider because it allows them to prepare the roadmap of innovating and developing new products. Particularly, it is the main determinant in creating new products, and a local difference from other localities.

Thirdly, improving the quality of products, and services is necessary to better meet the needs of consumers. For instance, consider Banh It La Gai. As it takes time to export to other countries, companies can think about how to extend the expiry date period, and to keep the product fresh, when it is sold in another country.

Fourthly, it is essential for companies to identify the target customers, and do market research in terms of the market capital, desires of the target customers, and potential competitors, which is a good source for developing the ideas of products.

Fifthly, companies need to focus on innovating, and improving the design, and model of the product. The design, packaging, and labelling on products play a role in not only protecting, describing, and introducing the product, but also as a marketing tool, which affects consumers' choices.

Sixthly, enterprises should pay more attention to updating the quality standard, consumer guidelines, and original labels because consumers nowadays are more aware of the importance of the product quality to their health, and community. They tend to focus on the quality by criticising the product origin, ingredients, and nutrition.

Production Process Innovation

From the research result, it has shown that most of the enterprises in Binh Dinh have not precisely evaluated the role of the production process of innovation. Therefore, directions, and solutions for encouraging the process of innovation are essential.

Firstly, it is recommended that the enterprises should be aware of the definition of innovation in the production process. Here, innovation is performed on current elements, which grow to become enhanced based on the existing resource. It does not mean that the enterprises have to spend a large budget on replacing technology.

Secondly, enterprises should focus on the production methodology to improve the product quality. The enterprises also need to consider managing production in the production process. Especially, the managers should have the knowledge in arranging, and distributing labours among the production stages, which are based on their capacity, and skills, and lead to an increase in productivity.

Thirdly, the enterprises should keep track, and update the modern production process. At the same time, companies are encouraged to apply the automatic technology to increase the productivity, flexibility, and efficiency.

Management Organisation Innovation

Firstly, enterprises should be aware of the new management methodology, which is currently one of the aspects that is underestimated by the enterprises. The enterprises should proceed with a new administration methodology, such as in the supply chain management, operation model design, and knowledge management, and apply the quality standard system, and new ideas in operation. These implementations allow enterprises to increase their productivity, and spend resources effectively. Workers are also encouraged to perform their capacity, and creation. When the management, and organisation is improved, a competitive working environment is created that motivates the labour to be more creative in performing their tasks.

Secondly, enterprises should be concerned about developing their connection network in the value chain of the industry in which they are operating. In particular, companies could focus on building the network between the enterprises, and their customers, suppliers, and partners. In order to exploit the potential market, and increase the value added in cooperation, the affiliate networks should be based on their understanding about the market, and production chain of their industry.

Thirdly, the enterprises should apply the quality management system in business management. Specifically, the quality management system not only focusses exclusively on the quality of products made by the enterprise, but also the resources, and processes to create the desired quality products.

Fourthly, the enterprises should pay attention to the personnel organisation, and management. Although businesses have launched policies to reward, and encourage employees to innovate,

they do not have a decentralised power system for people to participate in decision-making effectively. Therefore, in order to promote innovation in the management organisation, enterprises need to create the environment, and conditions for employees to exchange, and propose their ideas regularly. The companies can promote sharing, and disseminating knowledge within the enterprise through financial support, and policy mechanisms.

Marketing Innovation

Innovation is not only researching, and inventing new products, but is also the process of exploiting the market demand, and extending the potential customers. Therefore, a marketing strategy reform should be one of the innovation activities of companies.

Firstly, although marketing innovation is highly appreciated by the enterprises, companies should pay more attention to the research, and development in marketing to reach the customer desires, and market needs. Currently, most of enterprises in Binh Dinh have online interactions. It is suggested that they should explore the desire of customers, and the market trends in these channels. Moreover, the enterprises have effectively collected the information of their customers, and competitors, which is showed through the high score in evaluation. The enterprises are suggested to keep their good performance. On the other hand, the evaluation in intervening new products has been underestimated, with a low evaluation score. Therefore, the enterprises should spend more budget in investing in the marketing strategy, in order to have a good shape in their new products for potential customers.

Secondly, it is recommended that enterprises invest more in developing the infrastructure, and information technology system, which would be beneficial for them in analysing customer desires, and making business plans effectively. Applying technology, and digital data analysis in marketing activities not only ensures the convenience in accessing products for customers, but also optimises the traditional business models for enterprises.

Thirdly, enterprises should take advantage of the technological era to highlight the specific characters of the product through the investment in sales, distribution channels, and advertising activities. The enterprises can extend their online sales system via social media, and search websites.

Technology Innovation

Firstly, enterprises should be active in innovating technology. Particularly, in order to reduce the pressure of huge capital, enterprises should consider the upgrading of technology in stages and breaking down the investment process through business cycles. By investing in stages, the enterprise can relax their budget, and keep track with the updated technology.



Secondly, the enterprises should focus on applying technology to the production processes, exploiting the equipment capacity effectively. In addition, in order to deal with the lack of capital source, enterprises should strengthen cooperation with foreign enterprises. It does allow the small, and medium-sized enterprises to take advantage of the updated technology, and knowledge, which can narrow the gaps in the product, and technical standard.

Thirdly, technological innovation should be maximised towards the social responsibility in environment protection. Thus, innovating in technology, production processes, and organisation needs to meet the environment protection requirements in the production and business process.

Conclusion

This study shows the innovation activities of enterprises in Binh Dinh, which is based on the average scores of evaluations in product innovation, production process innovation, management organisation innovation, marketing innovation, and technology innovation. The findings show that in general, the average score is only at the moderate level of three. Specifically, the innovation in products, the production process, and management organisations are only at an average level, while marketing innovation reaches a higher average level. The innovation in technology is at a lower average level. Meanwhile, in discussing the research results, the authors also propose solutions, and directions for enterprises to improve their innovation performance in the products, production process, organisation, marketing, and technology.

The authors are aware that using the data from surveys with 200 random samples, surveying with questionnaires, and analysing the result through statistical description is not strong enough to evaluate the current state of innovation in enterprises. The innovation activities are affected by both internal, and external factors. Therefore, it is necessary to define the factors influencing the innovation in enterprises through further research. Despite this limitation, we do believe that this study has contributed significantly to the qualitative study in the field of enterprise innovation in Vietnam, which is the emerging controversial issue among the researchers, specifically in terms of the evaluation criteria.

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