Impact of R&D Investment on Business Performance of Food Processing Enterprises Listed on Vietnam Stock Exchange

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ARTICLE INFO	ABSTRACT
	Sharma (2012) shows the positive and direct impact of research and development on business results of enterprises. Research and Development (R&D) investment is known as a key direction in creating competitive advantage of enterprises in the globalization context. This study aims to determine the impact of R&D investment on the business performance of food processing industry listed on the Vietnam stock exchange. The results show that R&D investment has a positive effect on business performance. In which, the factors of R&D fund and firm size have a positive impact on business performance. From this result, food processing industry listed on the Vietnam stock exchange need to determine the right position and importance of R&D investment, should allocate more budget for research and development to improve business efficiency.
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INTRODUCTION

R&D investment is not only considered as an upstream investment activity of each country but also a vital activity for each enterprise. Heavy impacts of the Covid-19 pandemic, along with the increasingly fierce competition and the development of Industry 4.0 directly affecting enterprises make increasing R&D investment in enterprises is inevitable. Technology-based Enterprises having huge investments in R&D can maintain competitive advantages and future growth prospective (Lee et al., 2011). Some other studies in the world also show that the research and development of new products as well as the improvement of production processes bring about obvious benefits to enterprises, namely creating a distinct competitive advantage in comparison with their rivals, thereby increasing market share and monopoly profits (Filatotchev et al., 2009; Jiménez-Jiménez & Sanz-Valle, 2011). The problem of no or little focus on R&D investment leads to a decrease in the motivation to create knowledge and creativity, leading to a decrease in the productivity of enterprises (Schmenner, 2004).

According to Cassiman & Veugelers (2006), in order to clarify how research and development and technology adoption affect business results, these effects need to be studied in each specific context. In Vietnam, research and development does not take place under favorable conditions like in developed countries (Nguyen, 2016).

The food processing industry was one of the most competitive industries in the world in the early 1980s. In Vietnam, important achievements have been achieved in this industry, making great contributions to the growth of this industry as well as the economic growth with the average growth rate of industrial production index in 2016-2020 period was 7%/year. The production value of accounts for 19.1% which is the highest proportion in the processing and manufacturing industries in Vietnam, demonstrating the importance of the industry (GSO, 2021). However, studies on the impact of R&D on enterprises in the food processing industry in particular are quite limited. The main reason is that it is difficult to collect information about R&D activities of enterprises in general and there is no professional agency to collect R&D data of enterprises on a regular basis. In particular, there are very few studies on the total cost of R&D investment and assessing its impact on the performance of food processing enterprises. Therefore, this study aims to find out the impact of R&D investment on business performance of 190 food processing enterprises listed on the Vietnam Stock Exchange in the period of 2016-2021 to find out the relationships among variables. From the collected data, the study is expected to propose solutions and some policy

recommendations related to R&D investment activities in food processing enterprises in Vietnam.

RESEARCH OVERVIEW, THEORETICAL BASIS AND RESEARCH METHODS

Research overview

R&D activities play a very important role in the success of many businesses around the world.

Some important research on R&D

R&D has been playing an important role in the success of many large corporations and enterprises around the world. According to OECD (2002), R&D is used to refer to creative activities carried out on a basis to produce knowledge, including knowledge about people, cultures, societies, and the use of this knowledge to invent a new application. In the OECD (2002), the R&D process consists of two stages: a research phase with the main purpose of finding new knowledge and a development phase with the main purpose of applying that new knowledge in inventing a new product or process. Having the same approach, research of Chiesa (2001), and Nobelius (2004) has outlined the very rapid development of thinking and practical activities in the field of R&D management. These studies systematically provide characteristics and standards that help enterprises to identify and continuously improve the problems in their R&D system and in how to manage their R&D system.

In summary, the above research results have provided quite comprehensive theories on R&D, including: basic concepts, limitations to help identify R&D activities in practice; classifications and characteristics; R&D processes and content; important influencing factors and relationships of R&D investment activities, the development of generations of R&D management.

Some important research on the impacts of R&D on the business performance

First, spending on R&D and financial performance have been researched by economists in empirical studies, including (Mansfield, 1962). This study found a positive effect of R&D spending on the firm's financial performance. Both Mansfield (1980) and Pakes & Griliches (1984) share the same opinion that R&D spending was positively related to a firm's ability to innovate as reflected in its productivity growth.

In 2010s, food processing businesses were not used to R&D investment but recently, they have begun to focus on this activity in order to be able to launch new products and services to meet market needs and implement development strategies to strengthen the competitiveness, brand and power of enterprises. R&D investment is an activity that helps businesses expand their existing businesses, develop new business activities to improve their competitive position, increase sales, and thus gradually increase their market share. However, it is difficult quantify the impact of R&D on business performance of enterprises. Although it is undeniable that there is a relationship between R&D and business performance of enterprises, R&D activities are inherently complex, do not follow uniform rules and are influenced by many factors such as technology, knowledge, and other factors. One of the studies by Nguyen and Nguyen (2011) presented an assessment of the impact of R&D on business results of enterprises with the use of data envelopment analysis (DEA) model. The sample of the research consist of 40 furniture manufacturing and exporting enterprises in Binh Dinh. The estimated results from the DEA model show that the technical efficiency of R&D in furniture manufacturing and exporting enterprises in Binh Dinh is generally low and tends to decline. The influencing factors considered are capital, total number of employees and age of enterprises with OLS estimation procedure.

Therefore, the problems of surveyed enterprises will be the most important basis for the authors to discuss and suggest solutions. Research methods and solutions in the previous studies have directional meaning for this article of the authors.

Research method and sample selection

The research is conducted through a literature review from relevant scientific articles and textbooks to systematize models and measures of variables used in the test.

The preliminary study is also carried out with the analysis of a sample of enterprises in the food processing industry to adjust the model and measure accordingly.

After the preliminary research phase, the authors use formal research with sample size and time series ensuring appropriateness. The purpose of the formal research is to analyze the model to show the relationship between R&D investment and business performance. Thus, we can provide conclusions about the proposed research hypotheses as well as testing and detecting defects of the model, considering whether the model violates the initial hypothesis or not.

Sample description

Size: the study uses 264 observations which, according to author Nguyen (2015), is guaranteed to run the array data model.

Sampling method: the samples have been randomly chosen from enterprises in the food processing industry listed on the stock exchange. A total of 44 securities codes of listed companies are subject to the study.

Research data

The data used in the study is Panel Data which is a combination of cross-sectional and time series data. This is a symmetric unbalanced data type. It is taken from the economic and financial website www.cafef.vn. Indicators are filtered out from the Balance Sheet and business Statement of these enterprises in the 2016 - 2021 period. Two techniques used to process panel data are through random effects model

(re) and pooled regression model (POLS). Observational samples of 44 enterprises in the food processing industry in Vietnam have been used.

RESEARCH FINDING AND DISCUSSION
Overview of enterprises in the food processing industry

Food processing is a level 2 industry according to the classification of the Ministry of Industry and Trade. It is an important sector among the processing and manufacturing industry with large development potential due to the stable domestic and export market demands. The food processing industry specialize in researching the field of processing and preserving agricultural products, periodically inspecting and assessing the quality of agricultural products during processing, researching and developing new varieties and products, organizing and operating production and preservation lines, researching and creating new materials. Food processing is an integral part of industry performing activities to preserve, improve and enhance the use value of raw agricultural materials via thermalization processes to meet the needs of the market, increase the consumption of agricultural products, bring about high economic results. The food processing industry is very diverse in terms of sectors, products, technological processes, and levels of processing

Businesses in the food processing industry (FPI) are usually companies existing for a long time with a stable growth rate, which will not be a good choice for investment. Therefore, investors outside the businesses will always carefully consider some of the potential risks faced by those companies. Besides, the successful enterprises in the food processing business are large market leaders with strong brands currently dominating the market namely Masan, Vinamilk, Lam Son Sugar, Kido, Hai Ha, Bibica , Habeco. Thanks to the advantage of scale, companies in this field can expand their production plants in the market, with new techniques and technologies at low cost.

Food production and processing enterprises tend to locate in raw material-rich areas and large urban areas, leading to uneven distribution among regions. The Southeast is the region with the highest density of food processing enterprises and cooperatives in the country with 2575 units, accounting for 35.09% of the total. Second comes the Mekong River Delta with 1837 enterprises, accounting for 25.03%, the third is the Red River Delta with 1436 enterprises, accounting for 19.57%, the North Central and Central Coast has 828 enterprises, accounting for 11.28%. In the Northern Midlands and Mountains, there are 388 enterprises, accounting for 5.29% while in the Central Highlands, with harsh climate and geography, there are 273 enterprises, accounting for 3.72%.

Table 1: Number of food processing enterprises and cooperatives by sectors

	State-owned enterprises DNNN	DNNQD	FDI	Cooperatives	Total
Food processing industry	**46**	**6,672**	**419**	**201**	**7,338**
1. Processing and preserving meat and meat products	3	316	20	27	
2. Processing and preserving seafood and aquatic products	7	1,178	54	25	
3. Processing and preserving vegetables and fruits	1	897	46	16	
4. oil and fat production	0	103	14	1	
5. Processing milk and dairy products	2	200	9	2	
6. Power Milling and production	14	1,098	28	13	
7. Other food production	16	2,195	167	109	**2,478**
8. Animal, poultry and aquatic food production	3	685	81	8	

Source: GSO (2018)

Basing on the data, the food processing industry currently has 8 sectors. Of 7,338 enterprises and cooperatives in this industry, there are 2,478 enterprises and cooperatives in other food production industries (such as sugar, cocoa, chocolate, and confectionery, food production, ready-to-eat foods), accounting for the highest proportion of 33.9%,

followed by processing and preserving seafood and other aquatic products with 1246 enterprises, accounting for

17.23%, the lowest is in the oil and fat production industry with 118 enterprises and cooperatives, accounting for 1.61%.

Statistical results describing the main variables of the model

Table 2: Main variables of the model

```
    Variable |      Obs      Mean     Std. Dev.     Min        Max
-------------+---------------------------------------------------------
     muatbmm |      210    1.51e+10    4.83e+10     65460     5.24e+11
      hmmmtb |      251    3.86e+10    1.57e+11   -3.23e+10   1.15e+12
     quydtpt |      190    1.61e+11    5.49e+11    3.00e+08   4.31e+12
        lnst |      258    4.14e+11    1.63e+12   -2.56e+11   1.07e+13
         tts |      258    2.89e+12    6.63e+12    6.84e+08   4.78e+13
-------------+---------------------------------------------------------
        vcsh |      258    1.87e+12    5.07e+12   -4.80e+11   3.61e+13
         ROA |      258    4.525078   31.31181   -455.7335   112.2609
         ROE |      258    13.66301   34.84285   -152.3025   365.0175
       tscdhh |     253    3.73e+11    1.23e+12    3.44e+07   8.66e+12
     firmage |      264    30.79545   15.05844       8          67
-------------+---------------------------------------------------------
     tscd_tts |     258    .1677005   .2713814       0       3.217412
```

Source: Data analysis results of the authors

Table 2 shows that, the standard deviation is quite different in many variables in the food processing industry. This is one of the characteristics of this industry. Specifically, procurement of equipment and machinery has the difference between listed companies in this industry with the highest value of VND 524 billion and the lowest spending only VND 65.46 thousand. About spending on investment and development funds, on average, those companies in the period 2016 - 2021 spent VND 161 billion per year on this fund, of which the highest spending was VND 4,310 billion and the lowest was VND 300 million.

The profit after tax of the listed FPE in this period was VND 414 billion/year on average and the standard deviation of this group was very large. The average total assets was VND 2.89 trillion with the highest asset value of VND 47.8 trillion and the lowest of VND 684 million.

The average equity of listed companies in this industry was also quite large with about VND 1.87 trillion in which the largest equity was up to VND 36.1 trillion.

The business performance of those enterprises was also very different when ROA (average return on total assets) was about 4.53% and ROE (return on equity) was about 13.66% which is pretty good average performance level in this sector.

The average value of tangible fixed assets was VND 373 billion in which the highest value was VND 8.66 trillion and the lowest was VND 34.4 million. The average ratio of fixed assets to total assets reached 16.77%.

Analysis results of of the influence of R&D on business performance of food processing enterprises
Estimated results of the impact of R&D on profit after tax

For panel data, the outstanding tend to be correlated according to the time for each subject, so we used cluster-robust standard errors with clustering of each object to be able to control this condition.

Table 3: Estimated results of the impact of R&D on profit after tax

```
Linear regression                           Number of obs    =       190
                                            F(3, 186)        =      16.79
                                            Prob > F         =     0.0000
                                            R-squared        =     0.7064
                                            Root MSE         =     9.7e+11

        ----------------------------------------------------------------------
             |              Robust
        lnst |     Coef.    Std. Err.    t     P>|t|    [95% Conf. Interval]
        -----+----------------------------------------------------------------
     quydtpt |   2.688653   .3917137   6.86   0.000   1.91588     3.461426
    tscd_tts |   1.18e+11   1.22e+11   0.97   0.335  -1.23e+11    3.59e+11
     firmage |  -5.63e+09   2.42e+09  -2.33   0.021  -1.04e+10   -8.62e+08
       _cons |   1.54e+11   9.83e+10   1.56   0.119  -4.01e+10    3.48e+11
        ----------------------------------------------------------------------
```

Source: Data analysis of the authors

The results of regression estimation using cluster-robust standard errors show that there are two factors that have a statistically significant influence on profit after tax namely investment funds for development and the age of enterprises. Specifically, the investment funds for development has a positive effect on the profit after tax, when spending 1 dong on this fund, the profit after tax will increase by 2.7 dong. Besides, the age of enterprises has a negative effect on profit after tax, the minus symbol implies that on average, the younger the enterprises are (newly established), the higher the profit after tax is. It can be explained that in 2020 the heavy impact of the Covid-19 epidemic caused a sharp decline in the profit after tax of enterprises.

Check for multicollinearity

Table 4: Multicollinearity estimation of age of enterprises, R&D and Profit after tax

```
. estat vif
```

Variable	VIF	1/VIF
firmage	1.04	0.960069
quydtpt	1.04	0.962944
tscd_tts	1.00	0.996708
Mean VIF	1.03	

Source: Data analysis of the authors

The data show that VIF is less than 2. As a result, there is no multicollinearity in this model.

Check for Heteroskedasticity: Since the authors used cluster-robust standard errors, there will be no need to test Heteroskedasticity.

Table 5: Estimated results of R&D effects on profit after tax using cluster-robust standard errors

```
Linear regression                              Number of obs   =       190
                                               F(3, 186)       =     16.82
                                               Prob > F        =    0.0000
                                               R-squared       =    0.7147
                                               Root MSE        =    9.6e+11

-------------------------------------------------------------------------------
          |               Robust
    lnst  |    Coef.    Std. Err.    t     P>|t|     [95% Conf. Interval]
----------+--------------------------------------------------------------------
  quydtpt |  2.507993   .3758164   6.67   0.000     1.766582     3.249404
 tscd_tts |  1.44e+11   1.39e+11   1.04   0.302    -1.30e+11     4.17e+11
 firmsize |  1.42e+11   5.85e+10   2.42   0.016     2.63e+10     2.57e+11
    _cons | -3.87e+12   1.58e+12  -2.46   0.015    -6.98e+12    -7.67e+11
-------------------------------------------------------------------------------
```

Source: Data analysis of the authors

The data show that there are 2 factors having a statistically significant influence on the profit after tax, which are the investment fund for development and the size of the enterprise. Specifically, the investment fund for development has a positive impact on the profit after tax, when spending 1 dong on this fund, the profit after tax will increase by 2.51 dong. Besides, the size of the business also has a positive effect on the profit after tax, the larger the size of the enterprise is, the higher the profit after tax is and vice versa.

Table 6: Multicollinearity estimation of the enterprise size, R&D and Profit after tax

Variable	VIF	1/VIF
firmsize	1.40	0.712712
quydtpt	1.40	0.714814
tscd_tts	1.00	0.995339
Mean VIF	1.27	

Source: Data analysis of the authors

Estimated results on the impacts of R&D on business performance

Dependent variable is ROA

Table 7: *Estimated results on the impacts of R&D on ROA*

```
Linear regression                              Number of obs  =      190
                                               F(1, 187)      =        .
                                               Prob > F       =        .
                                               R-squared      =   0.0925
                                               Root MSE       =   11.675

             -----------------------------------------------------------------------
                           Robust
      ROA |      Coef.   Std. Err.     t     P>|t|     [95% Conf. Interval]
  ------------+----------------------------------------------------------------------
   quydtpt |   6.52e-12   1.24e-12    5.25   0.000      4.07e-12    8.97e-12
   firmage |   .1169619   .0597345    1.96   0.052     -.0008783     .234802
     _cons |    2.13775   1.539729    1.39   0.167     -.8997215    5.175222
  ------------+----------------------------------------------------------------------
```

Source: Data analysis of the authors

The above data reveal that investment fund for development have positive and statistically significant effects on ROA. if spending on this fund VND 1 trillion, ROA will increase by 6.52%. Besides, the age of the enterprise also has a positive and statistically significant effect on ROA. On average, the higher the age of the enterprise is, the higher the ROA is.

Table 8: Multicollinearity estimated results of ROA

estat vif

```
    Variable |      VIF     1/VIF
-------------+----------------------
     firmage |     1.04   0.963209
     quydtpt |     1.04   0.963209
-------------+----------------------
    Mean VIF |     1.04
```
Source: Data analysis of the authors

From the data, VIF is less than 2 so it can be concluded that there is no multicollinearity phenomenon in this model.

To ROE, the data provide similar results so it can be seen that only the investment fund for development has a positive and statistically significant effects on ROE. profit after tax on equity ROE. If spending on this fund 1 trillion dong, ROA will increase by 13.5%.

Table 9: Estimated results of R&D effects on ROE

```
Linear regression                              Number of obs  =      190
                                               F(3, 185)      =        .
                                               Prob > F       =        .
                                               R-squared      =   0.0584
                                               Root MSE       =   26.525

             -----------------------------------------------------------------------
                |            Robust
      ROE |      Coef.   Std. Err.     t     P>|t|     [95% Conf. Interval]
  ------------+----------------------------------------------------------------------
   quydtpt |   1.35e-11   4.45e-12    3.02   0.003      4.68e-12    2.22e-11
   firmage |   .0038907   .0977071    0.04   0.968     -.1888727    .1966541
  firmsize |  -3.672935   3.212864   -1.14   0.254      -10.0115    2.665628
  tscd_tts |   1.314354   4.573112    0.29   0.774     -7.707802    10.33651
     _cons |    109.557    90.0437    1.22   0.225     -68.08746     287.2016
  ------------+----------------------------------------------------------------------
```

Source: Data analysis of the authors

Table 10: Multicollinearity test of the model ROE

Variable	VIF	1/VIF
firmsize	1.85	0.539141
quydtpt	1.42	0.705899
firmage	1.38	0.726258
tscd_tts	1.01	0.994614
Mean VIF	1.41	

Source: Data analysis of the authors

From the data, VIF is less than 2 so it can be concluded that there is no multicollinearity in this model.

To sum up, some findings can be drawn from the panel data model analysis results as follows

The influence of investment fund for R&D on business performance is significant. Specifically, this fund has a positive influence on both profit after tax, ROA and ROE. Besides, the age of the enterprise, the size of the enterprise also affects the profit after tax and the business performance.

In the condition that other factors remain unchanged, the growth rate of the investment fund for R&D is faster than that of profit after tax, which lead to suggestion that enterprises in the food processing industry need to boldly invest money in R&D to research and develop new products, improve and innovate technology and production processes.

Investment fund for R&D has a higher impact on ROE than ROA, which once again affirms the role and importance of setting aside and expanding this fund in the coming time when ROE is recommended by many financial managers compared with ROA.

SOLUTIONS ON R&D ACTIVITIES FOR FOOD PROCESSING ENTERPRISES
Solutions from research results

From the above research results, R&D has impacts on profit after tax and some indicators reflecting business performance. Therefore, the research results clearly show that food processing enterprises need to establish and promote more R&D investment in enterprises. To invest in R&D in enterprises effectively bringing about positively impacts on business performance, some specific solutions are proposed by the authors as follows:

Solution 1: Properly and accurately plan costs for R&D investment in the financial statements of enterprises. The research results show that R&D has a positive impact on business performance of food processing enterprises. In reality, listed companies in general, including those in the food processing industry in the stock exchange, are responsible as well as under pressure from shareholders to ensure financial results and guarantee to implement the proposed plans. Planning R&D expenses on the financial statements of enterprises will have great impacts on the business performance. In fact, in order to have a new product, enterprises have to spend money on researching that product, then from the research results, a new product will be developed. Besides, businesses also have to spend an additional development cost to launch this product. Therefore, planning R&D costs in financial statements from an accounting perspective becomes much more complicated. It is difficult as well as sensitive to draw the line between research costs and product development costs. Therefore, the solution needed is to consider applying international accounting standards IAS - International Accounting. Research costs are included in expenses in Income Statement. Development costs are further recognized when the recognized criteria are capitalized and become intangible assets of the enterprise, helping to increase the value of the enterprise. Thus, development costs will be recorded in the balance sheet.

Solution 2: Enhance learning experience on R&D investment from foreign enterprises of similar size and industry. According to data, the current situation of investment funds for R&D in food processing enterprises in Vietnam in the period 2016-2021 is still limited and different in terms of investment level among enterprises in the same group. According to the results from expert interviews, the food processing enterprises in Vietnam have just implemented R&D investment in the form of research to improve products, but not finding and researching new products. Food processing enterprises in Vietnam in general tend to look for markets to export or expand export markets. The method of implementing R&D investment will be varied depending on export market. Each market group will have different needs for products as well as design and quality requirements. At that time, enterprises in this industry in Vietnam will consider investing in different research processes and stages. Therefore, despite being aware of the importance of R&D, food processing enterprises in Vietnam tend to make short-term R&D investments, not focusing on long-term and methodical R&D investments. With the goal that R&D investment will have a positive impact on business performance, approaching from the perspective of R&D investment in the short term, in order to promote and create

momentum for effective R&D investment, enterprises can consider learning experience, the R&D investment model of some countries which has many similarities with the food processing enterprises of Vietnam including Asian countries such as China, Malaysia, and Thailand when the enterprises in these countries have identified and selected the 3C model: Copy, Customize and Create. This is considered a suitable solution for Vietnamese enterprises at the present time when most enterprises still do not have enough resources to invest in R&D to find new products.

Solution 3: Choosing suitable partners to transfer technology. Enterprises in the food processing industry in Vietnam also need to actively seek and improve their own technologies, conduct domestic research or cooperate with foreign scientists to be able to absorb good and suitable technology with its business activities. In fact, according to the results from expert interviews, the food processing enterprises in Vietnam tend not to set up a specialized R&D Department/ Centre, instead, they choose to hire external experts to advise and support the implementation of R&D needs. In addition, due to the characteristics of the industry, the production line and processing technology play a core role. Activities expressing innovation and R&D investment are mianly technology transfering and innovation. With the above fact, choosing the right partner to carry out R&D transfering is considered an important solution to bring about efficiency. In Vietnam, enterprises should consider taking advantage of on-site human resources related to R&D through the cooperation among relevant training majors at universities, research institutes and R&D departments of enterprises.

Policy proposals

It is forecasted that in the period of 2022 - 2025, with a strategic development vision to 2030, Vietnamese food processing enterprises are still facing great challenges due to market transformation and new consumption trends, and changes in consumption habits. after a long time being affected by the Covid-19 pandemic as well as many other volatile factors globally. Therefore, choosing a strategy to increase product value is an indispensable requirement... To create conditions for the food industry to develop sustainably, the Government, the Ministry of Industry and Trade and related industries have been continuing to issue appropriate policies to encourage development, specifically, Vietnam's food industry needs to develop food products chain to improve product value. To do that, some policy proposals need to be considered as follows

First, strengthen the role of the State in R&D investment activities in food processing enterprises. State policies play an important role in promoting investment strategies for R&D, especially in large-scale food processing enterprises that currently have a good export market share in

some countries around the world. Because R&D investment always contains uncertainty about investment efficiency and high risks, enterprises urgently need the State to play a pioneering role in investing, directly investing a part in their R&D funds, committing to and supporting businesses from the beginning until they reach the market or not. At that time, the State can also be the potential customers of the output products of the R&D process and these products will be delivered to domestic consumers before being exported to foreign markets.

Second, it is necessary to specify policies related to R&D investment so that enterprises can easily access and apply the State's incentives. As analyzed in the current situation, R&D investment is completely different in each sector, even in enterprises of the same sector but having different size. Therefore, although the State has a general policy to support scientific and technological activities, innovation and R&D, there are currently no proper policies for each sector or each enterprise size. Specifically, the State needs to agree on specific and detailed instructions on the implementation of supporting policies to those businesses that still face many difficulties in terms of processes and procedures. The experts interviewed said that one of the big barriers of unsupported food processing enterprises is the system and process of implementing policies to enterprises but not the content of the policies. Therefore, in the policies related to R&D investment, the State needs to clearly define the priority order for each specific sector, specific enterprise size and proper policies for each development stage of each group of enterprises. In addition, to pioneering enterprises who proactively improve and master their technology, innovate and research new technologies, invest heavily in R&D activities, the Government also needs to focus on supporting R&D activities at these enterprises. In fact, though Vietnam has a National Foundation for Science and Technology Development and a National Technology Innovation Foundation, Vietnamese enterprises still face barriers in accessing these two foundations. Therefore, to overcome this limitation, the Ministry of Science and Technology should be assigned the main responsibility to coordinate with relevant agencies and units to perfect mechanisms and policies; propose outstanding solutions so that science, technology and innovation are really the main drivers of growth, improving productivity, quality, efficiency and competitiveness of the economy. Policy solutions in the period of 2022 - 2030 need to be implemented on the enterprise-centered basis so that R&D investment is really effective.

Third, the State needs to build up more centers playing the role of connecting, mobilizing and concentrating resources to promote national innovation activities, including R&D. To attract investment in R&D and innovation activities, Vietnam has decided to build a National Innovation

Center (NIC) in Hoa Lac Hi-Tech Park, starting at the end of 2020 with the objectives that NIC is the only innovation center where the Government has a separate decree to empower outstanding institutions, facilitate development and operate effectively. The establishment of NIC will be the foundation and motivation for the State to consider establishing more centers to support R&D activities of enterprises in general and enterprises in the food processing industry in particular. In addition, because enterprises carry out a lot of technology transfer, the State should encourage the establishment and development of intermediaries in consulting and supporting technology transfer in the form of tax incentives or credit. Besides, in order for centers to play their full role after being established, the State needs to promulgate a combination of other policies such as remuneration policies, policies related to creating a working environment, mechanism to attract domestic and foreign experts and scientists. With the implementation of the above activities, the policies related to R&D investment will be effective and comprehensive.

Fourth, to promote effectively the role of the State as well as supporting policies for R&D investment, long-term solutions that can be deployed immediately to create motivation for R&D activities in enterprises are: (i) Having methodical plan to invest in training programs at universities, research centers and science and technology infrastructure; (ii) Encouraging with specific tax and credit policies for enterprises that take the initiative in establishing and using fund for Science and Technology Development; (iii) Strengthening measures for intellectual property rights and enforcement of intellectual property protection and intellectual property activities.

CONCLUSION

This research contributes to adding scientific literature related to factor influence on business performance that is currently being held by companies. The analysis results in this study indicate that R&D fund and firm size affect the business performance. This suggests that R&D fund and firm size is an aspect that has been proven to play a role in achieving business performance. The existence of R&D fund and firm size makes the company's control of business performance better.

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