

Labor Productivity of Small and Medium-Sized Enterprises (SMES) By Industry Sector: Case Study in Thai Nguyen, Vietnam

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ABSTRACT: The objective of this study is to assess the labor productivity of small and medium-sized enterprises (SMEs), with a specific focus on analyzing an article that highlights the disparities in labor productivity among SMEs operating in the agricultural, industrial, and service sectors. The research findings demonstrate that SMEs in the industrial and service sectors exhibit higher labor productivity compared to those in the agricultural sector. Moreover, the study reveals that micro-sized enterprises have lower productivity levels in comparison to small and medium-sized enterprises. Additionally, the research identifies several other influential factors, such as research and development (R&D) activities, wage levels, and debt burdens, that significantly impact labor productivity. However, the study concludes that gender does not have a substantial effect on the labor productivity of SMEs in Thai Nguyen.

Keywords - labor productivity, small and medium-sized enterprises, Thai Nguyen

I. INTRODUCTION

Enhancing labor productivity is an immensely crucial factor in the development of small and medium-sized enterprises. By improving labor productivity, businesses can produce more goods or provide more services in a shorter period, thereby increasing revenue and profitability. According to statistical data, improving labor productivity can increase revenue and profitability by 30% to 40% for small and medium-sized enterprises. In the context of international integration and fierce competition as it stands today, improving and promoting labor productivity is a decisive factor in the competitive capacity of the economy as a whole and individual enterprises, especially for small and medium-sized businesses. The labor productivity situation in Vietnam has significantly improved in recent years, as evidenced by the increasing average labor productivity from 2010 until now. However, Vietnam's labor productivity remains low compared to other countries in the region, notably with the absolute disparity continuing to widen. Overcoming this situation requires a comprehensive process and the concerted efforts of the entire apparatus. Although labor productivity has been improved to some extent in small and medium-sized enterprises, the quality of labor is not truly optimal, and labor efficiency is not fully exploited or utilized. Enhancing labor productivity will enable businesses to compete more effectively in the market. With high labor productivity, businesses can produce goods or provide services at lower costs, attracting more customers and expanding market share. Numerous statistical data show that increasing labor productivity can reduce product costs by 10% to 20%, helping businesses enhance competitiveness and profitability. In reality, there are various methods that can be implemented to enhance labor productivity in general and in small and medium-sized enterprises, such as improving the quality of human resources, investing in technology, and enhancing management skills. The enhancement of labor productivity also depends on the practical conditions of each enterprise, allowing businesses to choose the appropriate methods to improve their labor productivity. There are many studies evaluating labor productivity as well as the impact of various factors on labor productivity in enterprises. This study aims to assess labor productivity among ultra-small, small, and medium-sized enterprises and evaluate productivity in different sectors. Additionally, it assesses the differences in income, research and development, gender, and debt levels in relation to labor productivity in enterprises.

II. THEORITICAL FRAMEWORK

2.1. SMEs in Vietnam

Small and medium-sized enterprises (SMEs) exhibit variations in their definitions across different countries worldwide. The specific criteria for categorizing a company as an SME depend on the country of operation. Various characteristics are taken into consideration for sizing or categorizing a company as an SME, which may encompass factors such as annual sales, number of employees, owned assets, market capitalization, or a combination of these attributes.

In the context of Vietnam, SMEs are characterized by relatively smaller capital scale and employee numbers compared to large enterprises. However, the exact definition of SMEs can differ across countries and regions. In Vietnam, as per the provisions stated in the 2020 Enterprise Law, SMEs are classified as enterprises with registered capital not exceeding 100 billion VND and employing no more than 300 individuals. The Vietnamese Enterprise Law further classifies SMEs into micro-enterprises, small enterprises, and medium enterprises. These classifications are based on an average annual participation in social insurance by no more than 200 employees and fulfillment of at least one of the following criteria: a) total capital not exceeding 100 billion Vietnamese dong; b) total revenue in the preceding consecutive year not surpassing 300 billion Vietnamese dong; or c) determination as micro-enterprises, small enterprises, and medium enterprises in the fields of agriculture, forestry, fisheries, industry and construction, trade, and services.

2.2. Productivity

Productivity is an important measure reflecting the efficiency of an economy. Productivity can be measured at different levels: the level of the entire economy, the industry level, the organizational level, the enterprise level, or even at the individual level.

Syverson (2011) defines productivity as the efficiency in production, indicating how much output is obtained from a certain input. Therefore, it is often expressed as the ratio of output to input. There are several methods to measure productivity, among which Labor Productivity (LP) is one of the most commonly used criteria. Labor productivity measures the extent to which labor capital contributes value to the economy or a business (Koch and McGrath, 1996).

According to Greenlaw et al. (2018), labor productivity is the value that each worker generates per unit of their input. The International Labour Organization (ILO, 2015) defines Labor Productivity as the total output produced per unit of labor input (measured by total labor) within a specified reference period.

Two fundamental measures to assess output are total output and value added (Cobbold, 2003). While using these two measures to represent the level of output does not exhibit significant differences for national-level data, the differences increase at the micro level due to the rising trend of using intermediate inputs (Cobbold, 2003). According to OECD (2001), the choice of output measurement method depends on the purpose of productivity utilization.

Although favored by many economists for studying production in industries and output per labor, as it reflects both primary and secondary inputs, the total output target requires considerable data availability (Cobbold, 2003). According to Syverson (2011), output measurement needs to be standardized across all outputs in terms of the same unit of measurement, whereas at the micro level, most businesses produce more than one output, thus requiring them to be aggregated into a single measure. However, detailed micro-level data and production firms often lack complete output data as well as conventions to convert them into the same type of output. Revenue can be considered an effective substitute in such cases. Although this may be acceptable and even the best option, using revenue can still pose a problem whenever price changes occur due to market power differences among producers.

In this study, the focus is on labor productivity of small and medium-sized enterprises in Thai Nguyen province. To ensure research objectives and a consistent calculation of output across different types of businesses, labor productivity is computed by dividing the monetary output of the enterprises by the number of employees.

Formula: $W = Q/T$

Where: W: Labor productivity level of a worker

Q: Total output measured in monetary terms T: Total number of workers

2.3. Factors that increase Labor Productivity

Human capital: Human capital refers to the knowledge, skills, expertise, and educational qualifications that a worker possesses and accumulates within an economy. Typically, the higher the average educational attainment in an economy, the higher the accumulation of human capital and labor productivity (Greenlaw et al., 2018).

Technological progress: Another factor influencing labor productivity is technological change and progress. Technological progress entails the combination of knowledge development, innovation, and the integration of such innovation into the production of new products and services (Greenlaw et al., 2018).

Wages and bonuses: Wages and compensation are important factors that contribute to motivating workers to enhance labor productivity. Wages directly impact the standard of living of workers. Striving for higher wages is an essential requirement for workers, as it provides motivation for them to develop their skills and labor capabilities. Wages are also one of the most important economic tools in labor management, used to stimulate a caring attitude towards work. Therefore, wages serve as a powerful factor in increasing labor productivity. In other words, for workers, wages are their primary income, and to increase wages, they must enhance labor productivity.

III. EMPIRICAL REVIEW

3.1. *The relationship between Firm productivity and income*

Research conducted by Erik S. Katovich (2018) on the relationship between weekly wages and labor productivity in Brazil revealed that productivity is significantly inversely related to wage levels across all economic components. Another study by Gulnara Azizova (2020), utilizing a regression model to assess changes in labor productivity and wages in Azerbaijan, suggests that employees need motivation to work efficiently, with wage being the main driver of job effectiveness. Wages influence labor productivity and have a stimulating effect on growth. At the same time, increasing labor productivity affects the probability of wage increases. Thus, there is a reciprocal impact between labor productivity and wages.

Emilia Herman conducted a study in Romania to examine the empirical relationship between labor productivity and wages in the manufacturing industry during the period 2008-2016. Regression analysis results showed a strong relationship between wages and labor productivity in the manufacturing industry in Romania. This study concluded that wages play an important role in promoting labor productivity. The author explained that workers in Romanian manufacturing enterprises aspire to improve productivity to enhance their standard of living. Additionally, other studies such as those by Meghan Millea (2002), Tsai and Yu (2005), Singh (2009), and Anand et al. (2010) have demonstrated that non-wage benefits positively contribute to the labor productivity of workers. These benefits have a significant impact on workers' behavior, providing persuasive reasons for them to continue working for the employer and fostering competition among them, thereby increasing business productivity. However, a study by Salimova et al. (2022) indicated that the traditional economic relationship between productivity and wages does not hold value in the surveyed areas in Russia. Increased productivity is achieved through an important reserve, providing additional motivation for workers and contributing to the increase in labor productivity.

3.2. *The relationship between Firm productivity and types of businesses*

The study conducted by Nguyen Van Tien (2016) aimed to assess the differences in labor productivity between foreign-invested enterprises and domestic enterprises in the Central region provinces of Vietnam. The research findings indicated that the average difference in labor productivity between foreign-invested enterprises and domestic enterprises during the period of 2011-2014 was 15.25%. Additionally, the study also revealed that state-owned enterprises had lower labor productivity compared to private sector enterprises. The author attributed the differences in labor productivity to the influence of the surveyed regions. Despite being influenced by temporal factors, the average difference in labor productivity between foreign-invested enterprises and state-owned enterprises remained unchanged.

Pham Thi Bich Ngoc and Nguyen Huu Van Phuoc conducted a study on labor productivity in small and medium-sized enterprises (SMEs) in Vietnam. The authors utilized data from 1,943 SMEs in nine provinces and cities of Vietnam, including Hanoi, Hai Phong, Ho Chi Minh City, Phu Tho, Nghe An, Quang Nam, Khanh Hoa, Lam Dong, and Long An, to evaluate the labor productivity of these enterprises. By using panel regression models, the authors demonstrated that labor costs had a significant impact on labor productivity in SMEs across all sectors. However, the degree of impact varied among different sectors. Furthermore, the study supported the findings of Papadogonas and Voulgaris (2005), concluding that if enterprises invest more in physical capital, labor productivity can be improved. The authors explained that when enterprises invest more in fixed assets, they can allocate more capital to information technology and communication, enabling them to enhance production processes, organizational structure, and external relations. This leads to more efficient operations and increased labor productivity.

3.3. *The relationship between Firm productivity and Research&Development*

The study conducted by Francesco Aiello, Lidia Mannarino, and Valeria Pupo (2019) [16] utilized data from manufacturing firms in Europe during the period of 2007-2009 to assess the impact of research and development (R&D) on labor productivity. The results indicated that R&D efforts had a positive relationship

with labor productivity regardless of the type of enterprise, whether it was a family or non-family business. Additionally, the study revealed that family businesses in European countries tended to invest more in R&D compared to other types of enterprises. In another study, Chrisman et al. (2017) found that labor productivity in family businesses was lower than in other types of enterprises, which was attributed to lower compensation packages. Moreover, this study focused on evaluating and comparing the impact of R&D on labor productivity between family-owned businesses and non-family-owned businesses. The authors also identified the positive influence of firm size (measured by the number of employees) and short-term debt to total debt ratio on firm productivity. Specifically, as short-term debt and the number of employees increased, labor productivity also increased.

3.4. The relationship between Firm productivity and gender

Ngoc Hoang, Daehoon Nahm, and Michael Dobbie (2021) conducted an empirical analysis on the relationship between gender, innovation, and labor productivity in Vietnamese Small and Medium Enterprises (SMEs). Specifically, the authors analyzed whether companies controlled by women had higher or lower productivity compared to those controlled by men. This study also examined whether companies controlled by women were more or less innovative than those controlled by men. It can be said that this study goes beyond most other research in this field by allowing endogeneity in innovation choices and by decomposing the productivity differences between innovators and non-innovators into resource and technology differences. The study revealed that while companies controlled by women were less likely to innovate, they were not less productive than companies controlled by men once the role of innovation was taken into account. In addition, a study by Asif M. Islam and Mohammad Amin (2023) found that the average labor productivity of informal enterprises owned by women was about 15.6% (0.17 log points) lower than the labor productivity of informal enterprises owned by men. Another study by Cuberes, D., and Teignier (2012) indicated that in developing countries, the gender gap in entrepreneurial activity had a significant impact on aggregate productivity. Specifically, the study revealed that the underutilization of women's potential could lead to lower aggregate productivity.

IV. DATA AND METHODOLOGY

4.1. Data

This study is based on primary data collected from a survey conducted in small and medium-sized enterprises (SMEs) in Thai Nguyen, Vietnam. Thai Nguyen is a relatively large province with diverse natural conditions, including flatlands, midlands, and mountainous regions. Therefore, the authors employed a random sampling method using a list of businesses provided by the provincial planning and investment department of Thai Nguyen. Based on available information, the total number of SMEs in the province was 7,340 (statistical data for the year 2020). However, due to the variation in scale and structure of enterprises, including micro, small, and medium-sized enterprises, as well as their distribution across agricultural, industrial, and service sectors, this thesis utilized a sampling formula considering the known population size.

$$n = \frac{N}{1 + Ne^2}$$

Where:

n: Sample size to be determined

N: Total population size of the business group by scale or sector

e: Permissible error. It is possible to choose $e = \pm 0.01$ (1%), ± 0.05 (5%), ± 0.1 (10%).

For the agricultural business group, due to the small number, all 22 businesses in the province were investigated. For the industrial (2924 businesses) and service (4394 businesses) groups, the author chose a permissible error of 10%. Therefore, the corresponding calculated sample sizes for surveying are 97 for the industrial group and 98 for the service group. Thus, the total sample size for the survey is determined to be 217 businesses. Data collection was carried out using various methods, including both direct and indirect surveys. For direct information collection, interviewers met and directly obtained opinions from business managers, while indirect surveys were conducted through means such as email, phone calls, and social networks like Zalo, Facebook.

4.2. Methodology

This article uses a multiple regression model to analyze the factors influencing labor productivity in small and medium-sized enterprises in the province of Thai Nguyen.

Based on the research objectives and the synthesis of factors influencing labor productivity from previous authors in the literature review section, the article proposes the following model:

$$LP_i = \beta_1 + \beta_2SCALE_i + \beta_3SECTOR_i + \beta_4DumRD_i + \beta_5DumGENDER_i + \beta_6SALARY_i + \beta_7DEBT_i + \mu_i$$

Where:

LPI: Labor productivity (calculated as the value added of DNi/number of employees of DNi)

SCALE: Scale of the enterprise (assigned a value of 1 if it is a micro-scale enterprise, 2 for small-scale enterprise, and 3 for medium-scale enterprise).

SECTOR: Business sector (assigned a value of 1 if the enterprise operates in the agricultural sector, 2 for the industrial sector, and 3 for the service sector).

DumRD: Research and development (assigned a value of 1 if the enterprise has R&D activities, and 0 if the enterprise does not have research and development activities).

DumGENDER: Gender (assigned a value of 1 if the business owner/manager is male, and 0 if the business owner/manager is female).

SALARY: Salary of the business owner or manager participating in the survey.

DEBT: Debt of the enterprise at the time of the survey. μi represents the error term.

To assess the impact of these factors on labor productivity, this study will employ the ordinary least squares (OLS) model to minimize the sum of squared differences between the observations from the collected data. Based on the constructed model, the study will use STATA software for data analysis and processing.

V. RESULT AND DISCUSSION

4.1. Data

Table 1: Statistical description of the Respondents

| Number | Characteristics | Frequency | Percentage |
|------------|---------------------|------------|---------------|
| 1 | AGE | 217 | 100.00 |
| 1.1 | 20 – 30 | 31 | 14,29 |
| 1.2 | 31 – 40 | 63 | 29,03 |
| 1.3 | 41 – 50 | 72 | 33,18 |
| 1.4 | 51 – 60 | 39 | 17,97 |
| 1.5 | Over 60 | 12 | 5,53 |
| 2 | EDUCATION | 217 | 100.00 |
| 2.1 | High School | 21 | 9,68 |
| 2.2 | Vocational colleges | 51 | 23,50 |
| 2.3 | Undergraduate | 132 | 60,83 |
| 2.4 | Graduated | 13 | 5,99 |

The following statistical table provides information on the age and educational level of small and medium-sized business owners participating in the survey in Thai Nguyen province. The total number of participants in the study is 217. Among them, the age group from 41 to 50 accounts for the largest proportion with 72 individuals, equivalent to 33.18% of the total participants. This indicates that this age group holds an important position and contributes significantly to the research. Additionally, the age groups from 31 to 40 and from 51 to 60 also represent a relatively high proportion, accounting for 29.03% and 17.97% of the total participants, respectively, with 63 and 39 individuals. This demonstrates the diversity in the age range of small and medium-sized business owners participating in the study. The age group from 20 to 30 accounts for 14.29% with 31 participants, while the number of individuals above 60 years old is only 12, representing 5.53% of the total. This research reveals a diverse age distribution among small and medium-sized business owners, while highlighting the contribution of the age group from 41 to 50.

The statistical data also indicates that the educational level of small and medium-sized business owners participating in the study in Thai Nguyen province is predominantly high. Among the 217 participants, 132 individuals (equivalent to 60.83% of the total participants) have graduated from university. Those who have completed vocational college programs account for the second highest proportion with 51 individuals, representing 23.50% of the total participants. In contrast, the number of high school graduates and postgraduate degree holders is relatively low, with 21 and 13 individuals, corresponding to 9.68% and 5.99% respectively. From the analysis, it can be observed that the small and medium-sized business owners participating in the survey have a relatively high level of education, particularly at the university level.

Table 2: Statistics on the number of small and medium-sized enterprises by type

| STT | Sector | Frequency | Percentage |
|-----|-------------------|------------|---------------|
| 1 | Agricultural Firm | 22 | 10,14 |
| 2 | Industrial Firm | 97 | 44,70 |
| 3 | Service Firm | 98 | 45,16 |
| 4 | Total | 217 | 100,00 |

Among the total of 217 small and medium-sized enterprises (SMEs) surveyed and included in the study, the agricultural sector accounts for the smallest number, with a proportion of 10.14%. In contrast, the industrial and service sectors have approximately equal proportions, accounting for 44.70% and 45.16% of the total SMEs, respectively.

Table 3: The results of the regression analysis

| Source | SS | df | MS | Number of obs | = | 217 |
|-------------------|------------|----------|------------|---------------|--------|----------------------|
| | | | | F(8, 208) | = | 351.06 |
| Model | 1.5629e+12 | 8 | 1.9536e+11 | Prob > F | = | 0.0000 |
| Residual | 1.1575e+11 | 208 | 556492150 | R-squared | = | 0.9310 |
| | | | | Adj R-squared | = | 0.9284 |
| Total | 1.6787e+12 | 216 | 7.7715e+09 | Root MSE | = | 23590 |
| PRODUCTIVITY | | Coef | Std. Err | t | P > t | [95% Conf. Interval] |
| 1. SCALE | | | | | | |
| - Small-Firm | | 30364.22 | 4649.522 | 6.53 | 0.000 | 21197.99 39530.45 |
| - Medium-Firm | | 46030.76 | 7927.281 | 5.81 | 0.000 | 30402.64 61658.88 |
| 2. AREA | | | | | | |
| - Industrial Firm | | 38279.04 | 7375.073 | 5.19 | 0.000 | 23739.56 52818.51 |
| - Service Firm | | 13680.71 | 5901.584 | 2.32 | 0.021 | 2046.125 25315.3 |
| 3. R&D | | 21063.93 | 4307.711 | 4.89 | 0.000 | 12571.55 29556.3 |
| 4. GENDER | | 1418.543 | 3620.191 | 0.39 | 0.696 | -5718.428 8555.514 |
| 5. SALARY | | 7962.357 | 835.9542 | 9.52 | 0.000 | 6314.328 9610.386 |
| 6. DEBT | | 8749.115 | 682.4104 | 12.82 | 0.000 | 7403.788 10094.44 |
| CONS | | 172419.5 | 9619.096 | 17.92 | 0.000 | 153456.1 191383 |

Table 4: Result of estimates table OLS, stats (chi2 df N rank) star (.1 .05 .001)

| PRODUCTIVITY | Coef |
|-------------------|--------------|
| 1. SCALE | |
| - Small-Firm | 30364.222*** |
| - Medium-Firm | 46030.758*** |
| 2. SECTOR | |
| - Industrial Firm | 38279.038*** |
| - Service Firm | 13680.712** |
| 3. R&D | 21063.926*** |
| 4. GENDER | 1418.543 |
| 5. SALARY | 7962.3568*** |
| 6. DEBT | 8749.1154*** |
| _cons | 172419.53*** |
| chi2 | |
| df | |
| N | 217 |
| rank | 9 |

Legend: * $p < .1$; ** $p < .05$; *** $p < .001$

Based on the findings presented in the two tables, the results indicate a high explanatory power of the model, with an Adj R-squared value of 0.9284, corresponding to 92.84%. This implies that the independent variables considered in the model account for 92.84% of the observed variation in the dependent variable.

Analyzing the data results further reveals several significant observations. Firstly, the variable SCALE, representing firm size, exhibits a strong positive correlation with labor productivity. The regression coefficient estimates for Small Firms and Medium Firms are 30364.222 and 46030.758, respectively, both statistically significant at $p < 0.001$. These findings suggest that as firms scale up from micro-enterprises to small enterprises, there is an approximate increase in labor productivity of 30 million VND. Additionally, expanding to large-scale enterprises further enhances labor productivity by over 46 million VND. The underlying rationale behind these findings is that while small-scale enterprises are relatively easier to manage, they often encounter challenges in terms of accessing capital and industry, which are critical factors in improving labor productivity. Secondly, the SECTOR variable, representing the operational sector, also exerts a significant influence on labor productivity. Industrial firms demonstrate higher labor productivity compared to service firms, as indicated by the regression coefficient estimates for Industrial Firms and Service Firms, which are 38279.038 and 13680.712, respectively, both statistically significant at $p < 0.001$. These results are aligned with the reality of Thai Nguyen province, which is currently experiencing robust industrial development and aspires to become a high-tech industrial province in the future. Consequently, both the province and the businesses operating within it are actively striving to enhance labor productivity within this sector. The regression coefficients suggest that transitioning from agriculture to the industrial and service sectors yields an approximate increase in labor productivity of 38 million VND and 13 million VND, respectively.

Thirdly, the R&D variable exhibits a highly significant positive correlation with labor productivity, as evidenced by the regression coefficient estimates, which are statistically significant at $p < 0.001$. Specifically, an increase in R&D expenditure leads to a labor productivity increase of over 21 million VND for small and medium-sized enterprises. These findings reinforce the notion that investment in research and development plays a pivotal role not only in augmenting labor productivity but also in enhancing competitiveness within the context of deep integration into the international economy.

The analysis also indicates that the gender of the business owner does not significantly impact labor productivity. This can be attributed to the small scale of the businesses considered in the study, where gender differences exert less influence. However, it should be noted that other factors such as firm size, industry, technology utilization, and so forth, may have varying effects on labor productivity between males and females. Moreover, the variable SALARY, representing wage levels, demonstrates a significant positive correlation with labor productivity. The regression coefficient for SALARY is 7962.3568, highly significant at $p < 0.001$. These results indicate that a one-unit increase in salary corresponds to a labor productivity increase of over 7 million VND. Higher wages serve as a motivating factor and contribute to job satisfaction, enabling employees to perform at a higher level and consequently enhancing labor productivity.

Lastly, the DEBT variable also exerts a significant impact on labor productivity. When firms maintain a controlled level of debt, it facilitates the utilization of borrowed capital for investment in business operations. Debt can be employed to improve working capital, purchase raw materials, expand production, increase production capacity, and enhance overall efficiency. Such investments contribute to improving firm competitiveness and subsequently boosting labor productivity. However, it is important to note that debt can also impose a financial burden on businesses. To meet debt obligations, firms may focus on improving production efficiency and increasing labor productivity. This dual effect of debt underscores the complex relationship between debt and labor productivity, where its impact depends on the specific circumstances and management strategies employed by businesses.

In summary, the findings highlight the importance of various factors in influencing labor productivity within the context of small and medium-sized enterprises. Firm size, operational sector, R&D investment, salary levels, and debt all demonstrate significant associations with labor productivity. Specifically, larger firm size and transition to the industrial sector positively impact labor productivity. Increased investment in R&D enhances labor productivity, while higher wages serve as motivational factors. Moreover, controlled debt can be utilized to make strategic investments that improve efficiency and competitiveness.

These results have important implications for policymakers and business owners seeking to enhance labor productivity. Policymakers can focus on supporting small and medium-sized enterprises, providing them with access to capital, industry resources, and incentives for research and development. Additionally, fostering a favorable business environment that encourages the transition from agriculture to the industrial sector can contribute to overall productivity growth. Business owners can consider implementing strategies to increase firm size, invest in R&D, offer competitive wages, and prudently manage debt to optimize labor productivity. Further research can delve deeper into the specific mechanisms through which these factors influence labor productivity. Exploring the role of technology adoption, human capital development, and innovation strategies within the context of different industries and regions could provide valuable insights. Additionally, analyzing the potential interaction effects between the identified factors may yield a more comprehensive understanding of their combined impact on labor productivity.

By continuing to investigate and address the determinants of labor productivity, both academia and practitioners can contribute to the advancement of knowledge in this field and guide evidence-based strategies to promote sustainable economic growth and competitiveness.

VI. CONCLUSION

The comparison between labor productivity levels among different types of enterprises reveals distinct patterns. Specifically, small and medium-sized enterprises demonstrate higher labor productivity in contrast to micro-enterprises, underscoring the significance of implementing enhancements to bolster productivity within these smaller businesses. This disparity can be attributed to various factors, such as economies of scale, resource allocation, and managerial efficiency. Consequently, it becomes imperative for small-scale enterprises to prioritize the adoption of innovative strategies, technological advancements, and efficient management practices to optimize their labor productivity and remain competitive in the market.

Similarly, when considering the agricultural sector, the observed labor productivity tends to be lower in comparison to industrial and service enterprises. This discrepancy may arise due to several reasons, including the nature of agricultural activities, reliance on manual labor, and limited access to advanced technology and modern practices. In light of these findings, it is crucial for agricultural enterprises to undertake in-depth research and analysis of the business models employed by successful industrial and service enterprises. By doing so, they can identify potential areas for improvement, adapt relevant strategies, and leverage best practices to enhance their own labor productivity.

In essence, sector-specific characteristics play a significant role in determining labor productivity levels. While small and medium-sized enterprises need to focus on internal advancements and innovation, agricultural enterprises must actively engage in knowledge exchange and learning from successful industrial and service counterparts. By proactively studying and understanding the business models that have proven successful in increasing labor productivity, agricultural enterprises can gain insights into effective approaches and adapt them to their own unique circumstances. In this way, they can effectively elevate labor productivity within their respective entities, contributing to overall economic growth and competitiveness in the market.

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