

Labor Productivity Assessment: A Study in Thai Nguyen University of Economics and Business Administration – Thai Nguyen University

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ABSTRACT : Labor productivity is essential in organizational development management, especially for training institutions. Researching labor productivity based on quantitative methods and determining the factors affecting this issue has important implications in improving Thai Nguyen University of Economics and Business Administration (TUEBA). Based on the analyzed situation, the proposed solutions are approached from many different aspects to enhance labor productivity at this training institution.

Keywords - Labor Productivity, TUEBA, DEA method, efficiency.

I. INTRODUCTION

Labor productivity of the organization in general and educational institutions, including the University of Economics and Business Administration in particular, has been a concern of many parties such as managers, investors, employees, law drafters, beneficiaries, and other stakeholders. High labor productivity will create competitive advantages and many other advantages and vice versa. Thai Nguyen University of Economics and Business Administration is a non-business unit with income; although its characteristics, the operation process is not much different from other businesses. Follow the process of receiving inputs such as students, budget, infrastructure, and then processing in a black box to produce outputs such as the number of graduates scientific products such as books, textbooks, articles.

The article uses the DEA method to assess labor productivity and analyze the factors affecting the labor productivity of TUEBA. From there, propose solutions to improve the school's labor productivity.

II. LITERATURE REVIEW

Evaluating an organization's labor productivity is a significant research issue, attracting the attention of scientists. There have been many published scientific works that address many different aspects of this issue, specifically as follows:

(Chánh & Thành, 2001) said that enterprise labor productivity is an indicator reflecting the entire individual efficiency of production and business activities of an enterprise. Enterprise labor productivity is usually measured through the average number of enterprise employees per the profit indicator.

(Hùng, 2016) assumes that the enterprise labor productivity is the ratio of the total output of the enterprise to the total input in a certain period.

(Freeman, 2008), argues that corporate labor productivity is a measure used to measure the efficiency of the use of inputs, usually calculated as the ratio between outputs (the profits of production and business activities of goods or services) and inputs (usually is the total number of jobs, the number of hours worked or the average number of employees of the enterprise).

(Ngân, 2016) used the SSA method to analyze the growth of Vietnam's social labor productivity from 1996 to 2016. The research team assumes that, in the period 1996-2005, the development of labor productivity of the economy is largely explained by the shift of labor from low labor productivity industries to high labor

productivity industries. In 2006-2016, the leading role of the restructuring industry gradually decreased and was replaced by the growth factor of intra-industry productivity. That reflects deepening structural reforms that have boosted productivity across all economic sectors.

(Đạt & Vân, 2015) applied the SSA method to analyze the source of labor productivity growth of Vietnam by industry in the period 1995 - 2014. The authors have shown that in 2000-2010, labor movement from low-productivity sectors to higher-productivity industries was the core driver of Vietnam's labor productivity growth. During the periods 1995-1999 and 2011-2014, productivity growth across industries was the primary source of the overall economy's increase in labor productivity. This statement is also confirmed in the study of (Bào, 2014) when analyzing the bottlenecks of Vietnam's labor productivity growth in 2005-2014. Research results show that intra-industry growth (mainly industry and services) has a fundamental contribution to overall labor productivity growth, and structural transformation has a negligible contribution.

(Bartelman, Haltiwanger, & Scarpetta, 2004) Assert that nearly half of productivity growth in the UK in the period 2000 - 2001 is due to intra-industry effects. Industrial restructuring contributes less than 10% to labor productivity growth in most studied countries. Even in the Czech Republic, the structural transformation makes labor productivity of whole in the economy decrease when workers working in low labor productivity industries increase rapidly.

III. METHODOLOGY

Data collection

Secondary data: The study collects data from sources such as The University's public data, books, newspapers, published publications, relevant published scientific studies of Vietnam, and other relevant sources. Primary data: Survey data at functional departments of the University. The data was obtained after surveying through interviews with a survey form.

The collected data will be aggregated, classified, and arranged in groups suitable to the research content. The authors use an excel spreadsheet to summarize and process.

Data analysis

The study uses Data Envelopment Analysis (DEA, for cross-sectional data), widely applied to research and evaluate labor productivity of organizations operating in many different economic, social, educational, and even political fields. This method will use the outputs of each University (including the results of education and training activities such as the number of graduates, and the outcomes of scientific activities such as the number of scientific registered/accredited/protected research works or number of publications) to compare with the institution's input (such as budget, enrollment, number of lecturers/researchers, number of service staff). If the result of DEA is close to or equal to 1, then the organization's productivity is considered increasing and vice versa.

Besides, external factors (such as economy, politics, society, policy) can directly or indirectly affect the labor productivity of each training institution. The research in this direction will reveal the actual status of labor productivity of the universities understudy in a wholly objective and scientific manner.

III. FINDINGS

Results are related to the technical efficiency of DEA

Table 1: DEA's technical performance indicators

Source: Calculated by the author

Year	Indicator		
	crste	vrste	scale
2012	0.967	1.000	0.967
2013	0.971	1.000	0.971
2014	1.000	1.000	1.000
2015	1.000	1.000	1.000
2016	1.000	1.000	1.000
2017	1.000	1.000	1.000
2018	1.000	1.000	1.000
2019	1.000	1.000	1.000
Average	0.992	1.000	0.992

In which:

crste = technical efficiency from DEA with constant returns to scale,

vrste = technical efficiency from DEA with variable returns to scale,

and scale = scale efficiency = $crste/vrste$.

Technical efficiency from DEA with constant returns to scale reflects the continuous labor productivity achieved when combining the right inputs and outputs. Based on the results related to the technical efficiency of Thai Nguyen University of Economics and Business Administration over the years, we see that:

Technical efficiency with constant efficiency to scale in 2012 only reached 96.7% and 97.1% in 2013 and from 2014 to 2019 got 1. Thus, TUEBA's labor productivity decreased from 2012 to 2013 and increased in 2014 - 2019.

The average total scale efficiency of 99.2% or 0.992 means that TUEBA needs to continue rationalizing its inputs and outputs. Increase the output factors by 0.8% to achieve optimal aggregate yield.

The factors of the working environment affect labor productivity

** Impact of economic growth on productivity and performance of TUEBA*

Economic growth will create conditions to increase investment in education, invest in upgrading teaching and learning facilities and equipment, build dormitories and welfare facilities to serve learners and staff of TUEBA. Next year, investment in education from the state budget is always higher than the previous year. Within five years of the 2016-2020 period, the state budget recurrent expenditure for education has increased by over 32.2%. Vietnam's public spending on education/GDP is at a high level compared to many countries in the world (4% in 2019).

** The Party's policy system and the State's laws promote the development of the education sector*

The system of policies of the Party and laws of the State promotes the development of the education sector, creating a legal corridor to improve the quality of training, thereby improving the productivity and operational efficiency of the University. The system of mechanisms and policies on education and training focuses on perfecting to overcome limitations and inadequacies, solve "bottlenecks" in educational innovation, and create a legal corridor for educational institutions' localities.

Over the years, the quality of higher education has been gradually recognized by the world through quality accreditation and international university rankings.

** Population and population mobility affect productivity and efficiency in education and training activities*

The results of the 2019 Population and Housing Census conducted by the General Statistics Office showed that, between urban areas and rural areas, there was a gap in the highest level of education of the population from 15 age or older.

The socio-economic development and good infrastructure in urban areas have created opportunities for people to have easy access to educational services. This gives people in urban areas an advantage over rural areas at higher levels of education. In addition, urban areas are also more attractive destinations in attracting highly qualified people to live and work.

** Digital transformation improves the quality of education and training*

Digital transformation has a profound impact on all aspects of the socio-economic life of humanity. The Covid-19 pandemic is seen as one factor accelerating this transition. Over the past two years, universities have been forced to close, teaching and learning have moved online, and teachers and students have had to transition and adapt to the use of technology.

Digital technology has opened up a whole new open education. Learners can study anytime, anywhere efficiently, and save a lot of money. Moreover, digital transformation in the education industry helps learners find and exploit learning materials quickly using online devices, not limited by the financial capacity of users. Technological achievements help store all data, manage and share data from many different schools, and recordschool history and transcripts to ensure transparent information.

Saving costs is a significant, practical benefit that digital transformation in education brings. Digital transformation in the education sector also helps learners have more choices. Learners can take an E-Learning course at a cheaper cost. This allows learners to achieve quality more effectively in learning.

** The trend of internationalization in higher education makes the education-training environment a highly competitive one*

The trend of internationalization creates many opportunities for higher education in developing countries to access international qualifications quickly and poses many challenges in competing to attract learners, lecturers, and staff. Higher education in developing countries requires to innovate rapidly, strongly from form to content, programs, and training methods to improve training quality and meet social requirements. Higher education in Vietnam is undergoing a drastic renovation of forms, contents, training programs, and teaching and learning methods. Nowadays, there are many private universities and colleges; international universities have been established according to the policy of educational socialization of the Party and State. The fierce competition among domestic higher education institutions requires universities to pay attention to the quality and effectiveness of training.

Some solutions to improve labor productivity of Thai Nguyen University of Economics and Business Administration

**Renovating school governance towards autonomy*

Improve leadership capacity of the School Council, Board of Directors and units; building the initiative, dynamism, and creativity of departments and mass organizations in the University to promote political and ideological education activities among lecturers and students to understand the mission and vision as well as opportunities and challenges to build a common unity of strength for the development of TUEBA. Renovate the school management, develop operating regulations management processes, form and make the school culture, quality culture, and professional culture in all activities, thereby creating a friendly educational environment. Specifically as follows: Strengthen the application of information technology in all activities of the school; Build a lean and efficient management apparatus; Decentralize units in the direction of autonomy and self-responsibility; Enhance the role of leading industry experts; Form specialized and interdisciplinary groups of scientists to solve significant problems in socio-economic development; Develop a system of criteria for monitoring the performance of individuals and units in an open, transparent and fair manner.

** Developing a team of high-quality teaching and scientific research staff*

Developing high-quality teaching staff is the essential solution to improving training, scientific research, and the university's brand. The school re-plans the training and development of staff according to the job position scheme and the need to develop training and scientific research, prioritizing sending young lecturers to train abroad.

** Improve the quality of training to meet the needs of society*

Actively and proactively innovating content, training programs, and teaching methods to enhance application and practice skills and focus on professional ethics and social understanding. Strengthening linkages between businesses and higher education institutions. Forecasting training needs to 2030, from which each faculty needs to identify a critical major to build into a high-quality training program suitable to human resource needs and international integration.

Periodically review, re-evaluate, and innovate training programs, content, teaching methods, etc., to build training programs with career-oriented approaches to meet society's needs. Renovate and update the teaching curriculum system, develop and apply 30% of the subjects with E-Learning electronic lectures. Renovate methods of training organization, teaching methods, and assessment of learning results.

They build a linked electronic library system, creating the best conditions for learners to access learning resources. Enhance the quality of testing activities, ensure quality in the school, strengthen testing activities, and supervise teaching and learning activities of lecturers and students. Carry out accreditation of universities and training programs according to the Ministry of Education & Training Standards.

** Speeding up the digital transformation process in the school's activities*

Disseminate, raise awareness, responsibility about ideology, determination to implement digital transformation to lecturers and administrators. Foster and train managers and lecturers with technical knowledge and skills to meet digital transformation requirements. Strengthen the application of IT in teaching, learning, and educational management—Building and putting into operation an online database on higher education. Implement blended learning solutions to improve the quality of IT-training in education and training.

** International integration to meet the development trend of the times while improving the quality and efficiency*

The school regularly promotes international integration by exchanging students, lecturers, and scientific research; increasing the number of programs taught in foreign languages; developing international research groups; promoting technology transfer and innovation; promoting training linkages with reputable education and training institutions of foreign countries recognized by competent authorities.

IV. CONCLUSION AND RECOMMENDATIONS

Conclusions

Based on a literature review, the author has developed a way to assess TUEBA's labor productivity in the period 2012-2019 by the DEA method. Then analyze five factors affecting labor productivity, including the impact of economic growth, the impact of the Party's policy system and the State's laws to promote the development of the education industry, creating a legal corridor to improve the quality of training, the impact of population and population movement, the impact of digital transformation in education and training and the impact of the trend of internationalization in education and training. From there, the study proposes several solutions to improve TUEBA's labor productivity.

It is necessary to renovate school governance towards financial and personnel autonomy. On that basis, it promotes the recruitment of high-quality personnel, considering this a vital driving force to improve the university's labor productivity.

Promote the application of IT in the school's activities, especially in teaching-learning and testing activities. Pay

attention to increasing investment in facilities to meet digital transformation requirements and socialization in teaching and learning.

It is necessary to boldly innovate the teaching model in module integration and learner-centeredness, thereby improving the school's labor productivity.

Strengthen international cooperation in education - training and scientific research. They form a network of links for academic exchange, inheritance, and transfer processes and technologies in education and training.

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