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Does education improve employee benefits in Vietnam? The first evidence from matched employer-employee data

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**Abstract**

Based on a uniquely matched firm-worker panel dataset for 2013 and 2015, this study is the first to consider the effect of education on employee benefits in terms of wages and quality of employment. We find that only college or university education has a positive influence on employee wages when taking into account worker characteristics alone but the wage premium declines when both firm and worker characteristics as well as time-invariant unobservable factors are controlled for. While there are many studies on the wage premium of education, the role of education on the quality of employment remains largely unexplored. Our results show that in fact, only college or university graduates benefit from a statistically significant difference in quality of employment in comparison with their colleagues without such education. The findings suggest that higher education programs play an important role in employee benefits.

**Keywords:** higher education; university graduates, economic benefits, panel data, Vietnam
1. Introduction

There have been numerous studies measuring the value of investment in education, seeking to
determine whether an optimal investment decision was made by individuals or governments.
According to Dickson and Harmon (2011), the concept of treating investment in education as
capital investment was introduced in a seminal work by Becker (1962), who postulated that
education is an investment which increases a worker’s productivity and affects future income by
raising a worker’s lifetime earnings. Kavuma, Morrissey, and Upward (2015) noted that
Becker’s theory linked workers’ knowledge levels to their achievements in formal schooling,
which suggests that more years of schooling would improve productivity and wages. According
to this theory, acquiring better education allows workers to maximize the present value of
lifetime earnings and thus the demand for various levels of education can be explained by private
returns.

On the basis of human capital theory, the benefits of education have been investigated in
terms of increased productivity, and a large number of studies focus on quantifying the
contribution of an individual’s education on the level of his or her wages. However, it has been
pointed out that the many earlier studies which consider the influence of education on wages at
firm level may be subject to potential bias by failing to control for both worker characteristics
and firm characteristics (Schank et al., 2007; Engbom & Moser, 2017). Using a unique
employee-employer dataset from Vietnam, this study contributes to the literature by considering
the influence of education on wages.

Another important contribution that differentiates this study from previous research is our
focus on the linkage between education and quality of employment.1 While there are numerous
empirical studies on the wage premium of education, the influence of education on quality of

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1 In Vietnam, many workers do not receive social benefits (e.g., sick leave, health insurance) because they are
often employed without written contracts. In this paper, employment benefits are considered in several forms, such
as obtaining sick leave, maternal leave, severance pay, health insurance, unemployment insurance, and receiving a
formal contract.
Employment remains largely unexplored, a lack that may be due to the limitation in the available datasets. Better education offers non-monetary gains due to a variety of work-related sources, such as stable, interesting jobs, jobs granting a high level of autonomy, better working conditions, good relationships with colleagues, etc. (Vila, 2000). In addition, education has positive externalities or social benefits, such as intra-family productivity, childcare, family healthcare, care for teenage pregnancy, long life expectancy, crime reduction, social cohesion and charitable giving (Dziechciarz-Duda & Król, 2013; Tan, 2014; Venniker, 2000; Vila, 2000).

Education is the foremost priority in Vietnam, and approximately 20% of total annual state budget expenditure is spent on education and training. However, there appears to have been little interest in determining whether higher education may be a driving force in improving quality of employment. To the best of my knowledge, this research on the subject is among the first to contribute empirical evidence of the influence of education on employment quality at firm level. With a view to policy implications, clarifying our understanding about the effect of education on other employee benefits is of great importance because a lack of empirical evidence on the advantages for employees with higher education adversely affects the government’s ability to adopt appropriate policies of investment in education.

The paper is structured as follows: Section 2 describes the background of the study. The data sources and methodology used are outlined in Section 3. Empirical results and discussion follow in Section 4, and the last section provides a summary and discusses policy implications.

2. Background of the study

Education plays a very important role in raising human capital value and economic growth in Vietnam. Consequently, the Vietnamese government has made it a budget priority to develop general education and specialized training to improve the quality of education for all. A significant proportion of the annual state budget is spent on education and training in Vietnam, and comprises approximately 20% of total state budget expenditure, equivalent to 5% of GDP (Minh, 2018), providing the opportunity to increase the coverage of educational services nationwide. This section first provides an overview of the national educational system in
Vietnam and secondly, sketches a picture of the linkage between education and employee wages in Vietnamese firms.

Figure 1: National education system in Vietnam
Nuffic (2011)
According to Figure 1, the Vietnamese national education system includes various levels, including primary, secondary and high school, vocational training, and college and university education. First, basic education includes primary and secondary education. While primary education aims to provide learners with skills in reading and writing and to establish a solid foundation for learning, secondary education fosters advanced skills, aimed at developing more comprehensive learner understanding. Secondly, orientation education provided through high schools and vocational training institutions is carried out in parallel, guiding students in two possible directions: (i) career orientation, to provide basic skills to prepare for entering the labor market; and (ii) school orientation (research), which seeks to provide solid knowledge to prepare for higher education. Finally, higher education (college and university) aims to provide in-depth knowledge of areas of scientific research. Higher education (or post-secondary education) can also be understood as the final formal learning stage.

![Pen's Parade](image-url)

*Figure 2: Pen’s Parade for comparing real wage income according to level of qualification.*

*Source: Authors’ calculation from the employee-employer dataset.*
Given the national educational system as described above, the question is how an employee with higher education can gain higher benefits. Figure 2 shows the linkage between education and employee wages. We also use first-order stochastic dominant analysis to determine which educational levels offered higher outcomes in terms of real wage income, as suggested in recent studies (e.g., Tran, Tran, Tran, & Nguyen, 2018; Tran, Tran, Pham, & Vu, 2018; Nielsen et al., 2013). Figure 2 suggests that the better educated the worker, the more likely it is that he or she will earn a higher income. It shows that workers who have a college or university degree will earn the highest income, while those who lack formal schooling will earn the lowest income. The findings imply that the level of education of workers may play an important role in wage affluence in Vietnam. It should be noted, however, that Figure 2 only provides a first impression of the linkage between education and wages, without considering other controlled factors. Hence, the question is whether higher education in fact improves the wages of staff when considering other characteristics of workers and firms. In addition, the question of the role of education for quality of employment will be addressed. Part 4 will offer empirical evidence on these research questions.

3. Data sources and methodology

3.1 Data sources

This study uses data from the SME surveys conducted by the Ministry of Labour, Invalids and Social Affairs (MOLISA), and the Central Institute for Economic Management (CIEM) in cooperation with Copenhagen University, Denmark. Stratified by ownership that includes all types of non-state firms (see CIEM, 2014, 2016 for details concerning the data), the surveys include two modules (employer and employee modules) conducted in 10 provinces.

First, enterprise modules for the years 2013 and 2015 were used because these surveys provide detailed firm-level data, including firm characteristics (e.g., firm size, age, export activities) and economic indicators. Second, the employee module is a set of separate worker questionnaires yielding information about each worker in the enterprises surveyed, including age, sex, and the educational level of workers in these enterprises. It also includes the number of hours worked and the wages of each individual.
A combination of these modules created a unique employer-employee unbalanced panel dataset with 2809 workers in 607 firms. This data source provides uniquely valuable information yielding both plant-level and individual characteristics, useful for considering the effect of education on employee benefits.

A common problem with time-variant data is that they are often expressed in current prices. Accordingly, our data on current variables are deflated to 1994 prices using GDP deflators to avoid the bias that might arise because of inflation. Particularly as concerns the dataset, the statistical description of the main variables in our regression estimations are displayed and explained in the methodology section of this study.

3.2 Methodology

In order to consider the influence of education on the wage premium and other employment benefits, following Mincer (1974) a basic specification controlling only for individual characteristics is given below,

\[ Y_{it} = b_0 + b_1 Edu_{it} + b_2 X_{it} + u_{it} \]  

(1)

where the dependent variable is the real monthly wage or one of several other employee benefits, such as health insurance payments, sick leave, maternity leave, severance pay, unemployment insurance and receiving a formal labour contract \(Y_a\). Among individual characteristics \(X_a\), employees with a higher educational level are expected to earn higher wages (Mincer, 1974). Thus, the effect of education on wages has been captured by dummy variables in the model.

Employee occupations are also added to the model since it is found that there is a difference in workers’ pay, depending on their occupation (Milner & Tandrayen, 2007). Other individual characteristics, such as tenure and age, are controlled for in the wage model, based on the expectation that more experienced workers earn higher wages (Doan, Le, & Tran, 2018; Mincer, 1974).

Extending the specification, we add firm characteristics, keeping the same individual characteristics in model (1). In consequence, model (1) can be written as follows:
\[ Y_{it} = b_0 + b_1 \text{Edu}_{it} + b_2 X_{it} + b_3 Z_{it} + u_{2it} \]  

(2)

Regarding firm level factors \((Z_{it})\), this study closely follows the model specification of Bernard and Jensen (1995). First, export status \((\text{EX}_{it})\) is considered the variable of interest and is captured in the model by a dummy variable for export participation. Second, firm size is expected to have a positive relationship with the wage premium because workers in larger firms are paid higher wages (Oi & Idson, 1999). Innovation activities are also shown to have an impact on wages (Schank et al., 2007) and this variable is therefore included in the model as a dummy. Furthermore, firm age has been included as an explanatory variable in the regression, based on findings that an increase in the number of businesses leads to an increase in the wage premium (Larsen, Rand, & Torm, 2011).

The ordinary least squares (OLS) method is used to estimate models (1) and (2). When using a matched employer-employee dataset, it is necessary to control for the potential association of error terms across employees of enterprises (Breau & Rigby, 2006). Consequently, robust standard errors are reported in our regression results. Furthermore, when considering the linkage between education and the wage premium, the regression results may also be biased due to unobserved factors. To overcome this problem, fixed-effects panel data estimations have been employed. With the availability of matched employee-employer datasets, the advantage of this specification may control for unobservable time-invariant factors of both firm and worker characteristics. This is the preferred method and has been applied in previous studies investigating the wage premium (e.g., Munch & Skaksen, 2008; Schank et al., 2007; Engbom & Moser, 2017).

Table 1: Definition and measurement of variables in the model

<table>
<thead>
<tr>
<th>Variables</th>
<th>Definition</th>
<th>Measurement</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent variable</td>
<td></td>
<td>Numbers</td>
<td>7.69</td>
<td>0.86</td>
</tr>
<tr>
<td>Real wage</td>
<td>The monthly wage of workers is converted to 1994 prices</td>
<td>Dummy</td>
<td>0.47</td>
<td>0.49</td>
</tr>
<tr>
<td>Sick leave</td>
<td>1 if employer provides sick leave, 0 otherwise</td>
<td>Dummy</td>
<td>0.40</td>
<td>0.49</td>
</tr>
<tr>
<td>Maternal leave</td>
<td>1 if employer provides maternity leave, 0 otherwise</td>
<td>Dummy</td>
<td>0.31</td>
<td>0.46</td>
</tr>
<tr>
<td>Severance pay</td>
<td>1 if employer provides severance leave, 0 otherwise</td>
<td>Dummy</td>
<td>0.45</td>
<td>0.49</td>
</tr>
<tr>
<td>Health insurance</td>
<td>1 if employer provides health insurance, 0 otherwise</td>
<td>Dummy</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Unemployment insurance 1 if employer provides unemployment insurance, 0 otherwise Dummy 0.37 0.48
Formal contract 1 if workers have a formal labour contract, 0 otherwise Dummy 0.52 0.49
Firm characteristics
Size
Firm age
Exporter
1 if firms participate in export markets, 0 otherwise Dummy variable 0.12 0.33
Innovator
1 if firms engage in innovative activities, 0 otherwise Dummy variable 0.35 0.47
Household ownership
Individual characteristics
Age
Worker permanent status
1 if workers have a permanent labour contract, 0 otherwise Dummy variable 0.97 0.16
Tenure
The number of years workers have been employed by the current firm Numbers 35.74 10.11
Gender
1 if the gender of workers is male, 0 otherwise Dummy variable 0.58 0.49
Blue-collar worker
1 if a worker is a production employee, 0 otherwise Dummy variable 0.59 0.49
Education
No education
1 if worker has no education, 0 otherwise Dummy variable 0.01 0.09
Primary school
1 if worker has primary education, 0 otherwise Dummy variable 0.04 0.2
Secondary school
1 if worker has completed secondary education, 0 otherwise Dummy variable 0.17 0.37
High school
1 if worker has graduated from high school, 0 otherwise Dummy variable 0.27 0.44
Vocational training
1 if worker has completed vocational education, 0 otherwise Dummy variable 0.12 0.33
College
1 if worker has graduated from college, 0 otherwise Dummy variable 0.08 0.28
University and higher
1 if worker has graduated from university or higher, 0 otherwise Dummy variable 0.13 0.34

4. Empirical results and discussion

Considering our main interest in the educational level variable, the results in column 1 of Table 2 show that the majority of estimated coefficients reveal statistically significant wage differences when no education is considered as a reference category. However, when time-invariant unobservable factors are controlled for, fixed-effects estimations (columns 2, 3 and 4 of
Table 2) indicate that a statistically significant difference is in fact found between employees without education and college or university graduates, while the influence of other educational categories on wages is statistically insignificant. This implies that stronger wage growth has a close link with a higher educational level. These results show the importance of controlling for unobservable characteristics as well as using matched employer-employee data. The results are in line with a number of papers have used the Mincerian approach to estimate the returns to education (e.g., Björklund & Kjellström, 2002; Card, 2001; De Brauw & Rozelle, 2008; Doan et al., 2016; Heckman, Lochner, & Todd, 2006). However, these results agree only partly with the empirical results of Larsen et al. (2011), which show that higher education brings higher wages. It should be noted that their results may be biased because of a failure to control for unobservable factors in their estimations.

Table 2: The impact of education on wage differentials

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>OLS</th>
<th>FE</th>
<th>FE</th>
<th>FE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td>Primary education</td>
<td>-0.3486**</td>
<td>-0.0960</td>
<td>-0.0599</td>
<td>-0.0926</td>
</tr>
<tr>
<td></td>
<td>(0.128)</td>
<td>(0.137)</td>
<td>(0.144)</td>
<td>(0.140)</td>
</tr>
<tr>
<td>Secondary education</td>
<td>-0.2463**</td>
<td>-0.1508+</td>
<td>-0.1331</td>
<td>-0.1339</td>
</tr>
<tr>
<td></td>
<td>(0.069)</td>
<td>(0.091)</td>
<td>(0.091)</td>
<td>(0.093)</td>
</tr>
<tr>
<td>High school</td>
<td>-0.0163</td>
<td>-0.0579</td>
<td>-0.0341</td>
<td>-0.0366</td>
</tr>
<tr>
<td></td>
<td>(0.052)</td>
<td>(0.070)</td>
<td>(0.072)</td>
<td>(0.071)</td>
</tr>
<tr>
<td>Vocational training</td>
<td>0.1811**</td>
<td>0.0686</td>
<td>0.0924</td>
<td>0.0817</td>
</tr>
<tr>
<td></td>
<td>(0.058)</td>
<td>(0.057)</td>
<td>(0.062)</td>
<td>(0.061)</td>
</tr>
<tr>
<td>College</td>
<td>0.2826**</td>
<td>0.0978+</td>
<td>0.1189*</td>
<td>0.1167*</td>
</tr>
<tr>
<td></td>
<td>(0.051)</td>
<td>(0.051)</td>
<td>(0.058)</td>
<td>(0.058)</td>
</tr>
<tr>
<td>University or higher</td>
<td>0.3431**</td>
<td>0.1559*</td>
<td>0.1597*</td>
<td>0.1616*</td>
</tr>
<tr>
<td></td>
<td>(0.055)</td>
<td>(0.066)</td>
<td>(0.072)</td>
<td>(0.072)</td>
</tr>
<tr>
<td>Worker male</td>
<td>0.1163**</td>
<td>0.1126**</td>
<td>(0.034)</td>
<td>(0.034)</td>
</tr>
<tr>
<td></td>
<td>(0.054)</td>
<td>(0.053)</td>
<td>(0.001)</td>
<td>(0.001)</td>
</tr>
<tr>
<td>Worker age</td>
<td>0.4350*</td>
<td>0.4262*</td>
<td>(0.181)</td>
<td>(0.172)</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.18)</td>
<td>(0.172)</td>
</tr>
<tr>
<td>Blue-collar workers</td>
<td>-0.0501+</td>
<td>-0.0521+</td>
<td>(0.001)</td>
<td>(0.001)</td>
</tr>
</tbody>
</table>

2 The linkage between education and wage differentials may be affected by other factors such as industrial characteristics and locations (Breau & Brown, 2011). However, the empirical results do not change the quality when controlling for these factors in the model.
Considering other aspects of human capital, while workers with permanent status earn higher wages than those without, blue-collar workers earn a nearly 6% wage premium over white-collar employees, with a significance of 1%. In addition, employees with more experience gain higher wages. Finally, gender difference is another factor that influences wages. On average, male workers are paid around 12% more than their female counterparts, depending on the specification model. This finding is in accord with numerous empirical results relating to the gender pay gap (e.g., Larsen et al., 2011; Milner & Tandrayen, 2007). On the one hand, as explained by Larsen et al. (2011), this wage gap between the sexes may indicate that male workers are more productive than their female counterparts (Hægeland & Klette, 1997). On the other hand, based on a study of the Vietnamese context, the gap could be interpreted as reflecting discrimination against women in wage payments (Liu, 2004).

Regarding the role of firm-level explanatory covariates in determining wages, the empirical results show that export activities have an insignificant effect on wages. However, while there is a positive nexus between innovation and wages, firm age has a negative effect on wage differences. Specifically, employees working for innovators earn wages nearly 14% higher.
than their counterparts working in non-innovating firms, keeping other factors constant. These results do not change much when time-invariant unobservable factors are controlled for by using fixed-effects estimation. In addition, both the estimated coefficients of firm size and household ownership are statistically insignificant.

Table 3: The influence of education on other employee benefits

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>Sick leave</th>
<th>Maternal leave</th>
<th>Severance payment</th>
<th>Health insurance</th>
<th>Unemployment insurance</th>
<th>Formal contract</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
<td>(6)</td>
</tr>
<tr>
<td>Primary education</td>
<td>-0.2122**</td>
<td>-0.0116</td>
<td>-0.0171</td>
<td>0.0009</td>
<td>0.2241*</td>
<td>0.0009</td>
</tr>
<tr>
<td></td>
<td>(0.070)</td>
<td>(0.058)</td>
<td>(0.067)</td>
<td>(0.021)</td>
<td>(0.094)</td>
<td>(0.033)</td>
</tr>
<tr>
<td>Secondary education</td>
<td>-0.0781*</td>
<td>-0.0843*</td>
<td>0.0218</td>
<td>0.0166</td>
<td>0.1039+</td>
<td>-0.0007</td>
</tr>
<tr>
<td></td>
<td>(0.039)</td>
<td>(0.038)</td>
<td>(0.037)</td>
<td>(0.014)</td>
<td>(0.061)</td>
<td>(0.020)</td>
</tr>
<tr>
<td>High school</td>
<td>-0.0114</td>
<td>-0.0158</td>
<td>-0.0039</td>
<td>0.0197+</td>
<td>0.0700+</td>
<td>0.0148</td>
</tr>
<tr>
<td></td>
<td>(0.032)</td>
<td>(0.029)</td>
<td>(0.028)</td>
<td>(0.011)</td>
<td>(0.042)</td>
<td>(0.017)</td>
</tr>
<tr>
<td>Vocational</td>
<td>0.0853*</td>
<td>0.0682*</td>
<td>0.0763*</td>
<td>0.0249+</td>
<td>0.1413**</td>
<td>0.0567**</td>
</tr>
<tr>
<td></td>
<td>(0.039)</td>
<td>(0.034)</td>
<td>(0.032)</td>
<td>(0.013)</td>
<td>(0.045)</td>
<td>(0.021)</td>
</tr>
<tr>
<td>College</td>
<td>0.0566</td>
<td>-0.0001</td>
<td>0.0193</td>
<td>0.0313+</td>
<td>0.1740**</td>
<td>0.0491*</td>
</tr>
<tr>
<td></td>
<td>(0.043)</td>
<td>(0.038)</td>
<td>(0.036)</td>
<td>(0.016)</td>
<td>(0.054)</td>
<td>(0.024)</td>
</tr>
<tr>
<td>University or higher</td>
<td>0.0855*</td>
<td>0.0489</td>
<td>0.0702*</td>
<td>0.0396*</td>
<td>0.1880**</td>
<td>0.0990**</td>
</tr>
<tr>
<td></td>
<td>(0.042)</td>
<td>(0.036)</td>
<td>(0.035)</td>
<td>(0.018)</td>
<td>(0.050)</td>
<td>(0.027)</td>
</tr>
<tr>
<td>Worker male</td>
<td>0.0224</td>
<td>-0.1970**</td>
<td>-0.0024</td>
<td>0.0020</td>
<td>0.0128</td>
<td>0.0039</td>
</tr>
<tr>
<td></td>
<td>(0.022)</td>
<td>(0.017)</td>
<td>(0.018)</td>
<td>(0.006)</td>
<td>(0.027)</td>
<td>(0.012)</td>
</tr>
<tr>
<td>Worker age</td>
<td>-0.0017</td>
<td>-0.0025*</td>
<td>-0.0002</td>
<td>-0.0002</td>
<td>0.0004</td>
<td>-0.0005</td>
</tr>
<tr>
<td></td>
<td>(0.001)</td>
<td>(0.001)</td>
<td>(0.001)</td>
<td>(0.000)</td>
<td>(0.001)</td>
<td>(0.001)</td>
</tr>
<tr>
<td>Permanent status of worker</td>
<td>0.1108+</td>
<td>0.1146*</td>
<td>0.1238*</td>
<td>0.0244</td>
<td>0.1621**</td>
<td>0.1892**</td>
</tr>
<tr>
<td></td>
<td>(0.058)</td>
<td>(0.051)</td>
<td>(0.056)</td>
<td>(0.017)</td>
<td>(0.061)</td>
<td>(0.035)</td>
</tr>
<tr>
<td>Blue-collar workers</td>
<td>-0.0449+</td>
<td>-0.0423+</td>
<td>-0.1019</td>
<td>-0.0107</td>
<td>-0.0246</td>
<td>-0.0063</td>
</tr>
<tr>
<td></td>
<td>(0.025)</td>
<td>(0.022)</td>
<td>(0.021)</td>
<td>(0.008)</td>
<td>(0.031)</td>
<td>(0.013)</td>
</tr>
<tr>
<td>Firm size</td>
<td>0.0008+</td>
<td>0.0020**</td>
<td>0.0011**</td>
<td>0.0001</td>
<td>0.0014**</td>
<td>0.0043**</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.001)</td>
</tr>
<tr>
<td>Firm age</td>
<td>-0.0062**</td>
<td>-0.0040*</td>
<td>-0.0029</td>
<td>-0.0014</td>
<td>-0.0095*</td>
<td>-0.0032**</td>
</tr>
<tr>
<td></td>
<td>(0.002)</td>
<td>(0.002)</td>
<td>(0.002)</td>
<td>(0.001)</td>
<td>(0.005)</td>
<td>(0.001)</td>
</tr>
<tr>
<td>Household ownership</td>
<td>-0.4262**</td>
<td>-0.3208**</td>
<td>-0.4390**</td>
<td>-0.4818**</td>
<td>-1.6737**</td>
<td>-0.3464**</td>
</tr>
<tr>
<td></td>
<td>(0.035)</td>
<td>(0.038)</td>
<td>(0.075)</td>
<td>(0.155)</td>
<td>(0.147)</td>
<td>(0.033)</td>
</tr>
<tr>
<td>Exporter</td>
<td>0.1808**</td>
<td>0.1845**</td>
<td>0.2557**</td>
<td>0.0491+</td>
<td>0.3899**</td>
<td>0.0513</td>
</tr>
<tr>
<td></td>
<td>(0.062)</td>
<td>(0.052)</td>
<td>(0.042)</td>
<td>(0.025)</td>
<td>(0.149)</td>
<td>(0.036)</td>
</tr>
<tr>
<td>Innovator</td>
<td>0.0475+</td>
<td>-0.0130</td>
<td>0.0595**</td>
<td>0.0101</td>
<td>0.0256</td>
<td>-0.0013</td>
</tr>
<tr>
<td></td>
<td>(0.025)</td>
<td>(0.022)</td>
<td>(0.022)</td>
<td>(0.008)</td>
<td>(0.033)</td>
<td>(0.014)</td>
</tr>
<tr>
<td>Observations</td>
<td>2,745</td>
<td>2,691</td>
<td>2,741</td>
<td>2,752</td>
<td>2,748</td>
<td>2,808</td>
</tr>
</tbody>
</table>

Notes: robust standard errors in parentheses, ** p<0.01, * p<0.05, + p<0.1. The base category for education levels is “no education”; marginal effects are reported in the results.

Table 3 shows the impact of education on other employee benefits. Our empirical results
show that among firm-level factors, employees working for household firms have lower quality employment than those working for non-household firms, such as limited companies and joint-stock enterprises. For example, workers in household firms earn 42.62% less pay for sick leave, and in comparison with their colleagues working in firms with other forms of ownership, such as limited or joint stock companies, only about 35% have a formal employment contract. These results may be explained by the fact that household firms are characterized by informality, small-scale operations and limited resources (Cuong et al., 2010) and in turn, these factors hinder household firms from exercising social responsibility for their employees, by paying for health insurance, sick leave and other employee benefits.

By contrast, exporters show higher corporate social responsibility for their employees than do non-exporters. These findings are in line with previous studies (e.g., Newman, Rand, Tarp, & Trifkovic, 2018). For example, Newman et al. (2018) show that a firm’s export activities have a positive effect on their fulfilment of their corporate social responsibilities.

Table 3 also shows that there is a significant difference in the quality of employment between educated employees and workers without education. However, a statistically significant difference is in fact found between employees without education and vocational, college or university graduates, while the influence of other educational categories on the majority of indexes measuring employment quality is statistically insignificant. Specifically, employees with college or university education or above secure 5%-20% higher benefits, depending on the specific type of benefits, keeping other factors constant. The findings are partly in line with previous studies showing that higher education offers better gains resulting from a variety of work related sources, namely stable and interesting jobs, better working conditions and good relationship with colleagues, etc. (Vila, 2000). Other studies also indicate that education has positive externalities or social
benefits such as childcare, family healthcare, teenage pregnancy, long life expectancy (Dziechciarz-Duda & Król, 2013; Venniker, 2000; Vila, 2000). The small difference in findings can come from the fact that while our study uses employer-employee panel dataset, the majority of previous studies base on the firm-level data only and fail to control for worker characteristics.

5. Conclusions and policy implications

Unlike previous studies, this study considers not only the linkage between education and wages but also the relationship between education and quality of employment. Contrary to many findings, the empirical results show that only workers with a college or university degree in fact earn higher wages and quality of employment than those without these degrees when only individual characteristics are considered. However, the effect of education on wages and other benefits becomes smaller but remains statistically significant when both firm and worker characteristics are included. This effect declines further when time-invariant unobservable factors are controlled for. The results imply that the role of education on wages and other benefits may be exaggerated when worker characteristics and unobservable characteristics are not controlled for.

It should be noted that earning a college or university degree in Vietnam is a time-consuming endeavour that requires individuals to spend about 20 or more years of continuous investment in schooling. However, our results indicate that only employees with a college or university degree in fact reflect a statistically significant wage difference in comparison with their colleagues without education. These findings suggest that the government needs to have supporting policies (e.g., preferred loans) to help employees undertake and finish higher education instead of settling for a general education (primary, secondary, or high school). In turn, this step would help employees improve their wages and employment benefits in the future.
This study has contributed to the understanding of the role of education on employee benefits but it still has some limitations that offer opportunities for future study. First, the findings are just right in the research period. Second, this study focuses only on domestic non-state manufacturing SMEs in Vietnam. Hence, the future work could consider the linkage between education and employee benefits in large firms, state owned enterprises and foreign investment enterprises. Also, the impact of education on employee benefits can be considered in other sectors including services or agriculture when comparable data are available. Combined together, these results provide a broader understanding of the impact of education on employee benefits in Vietnamese enterprises.

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References


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Public interest statement

Our study provided the first to consider the effect of education on employee benefits in terms of wages and quality of employment. We find that only college or university education has a positive influence on employee wages. In addition, while there are many studies on the wage premium of education, the role of education on the quality of employment remains largely unexplored. Our results show that in fact, only college or university graduates benefit from a statistically significant difference in quality of employment in comparison with their colleagues without such education. The findings suggest that higher education programs play an important role in employee benefits, which supports the argument that investment in higher education should be viewed as an investment in human capital in Vietnam.