

Labour Productivity, Work Experience, Age and Education: The Case of Lurik Weaving Industry in Klaten, Indonesia

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Received July 11, 2020; Accepted September 14, 2020

ISSN: 1735-188X

DOI: 10.14704/WEB/V17I2/WEB17047

Abstract

The study of productivity effects of changes in education, work experience, and age of labor force is of paramount importance because it has a direct impact on high and low performers among organizations. However, there is a significant gap in studies on exploring the quality of such work-life in Indonesia. This study seeks to analyze 1) the productivity effects of changes in education and age of the labor sector; 2) the productivity effect of work experience; and (4) the productivity effects of wages on craftsmen's lurik weaving fabric in Klaten district of Indonesia. The results drawn from this study show that 1) the level of education has significant effects on labor productivity; 2) the age composition of the labor force has a significant impact on productivity; 3) work experience can make a significant influence on labor productivity though it has a negative value; and 4) work wages cannot significantly influence on labor productivity.

Keywords

Education, Work Experience, Age, Work Wages, Labour Productivity.

Introduction

Development can be said to be successful if it can improve welfare in a broad sense. The influence of the condition of the population that has adequate quality will encourage

economic growth, and on the contrary, the population that has low quality will become a burden in development (Mobin & Ahmad, 2017). Development is a multidimensional process that encompasses a variety of fundamental changes to the social capital, social structure, attitudes of society, and national institutions while continuing to pursue accelerated economic growth, addressing income inequality, and alleviating poverty (Setini et al., 2020).

In Indonesia alone, it has enormous human resources to be utilized. This large population will be a potential or capital for economic development because it provides abundant craftsmen so that they can create added value for national production if the quality is good. However, it will be a burden if the quality is low because it has limited ability and productivity in producing productions for food, clothing, and shelter needs. This condition of the high population but low capacity is the problem of employment in Indonesia so far.

Manpower problems are dominated by the ability of craftsmen who are still inadequate in terms of education, work experience, and others so that they can implement flexible labor market policies. Craftsmen's workforce that is effectively driven requires organizational and technical skills so that it has a high level of use. That means the results obtained are balanced with the input processed. The productivity of the craftsmen's workforce is a very interesting phenomenon, because it measures the results of the workforce of human craftsmen with all the various problems, especially in cases of developing countries or in several organizations over a certain time (Giantari et al., 2020). Central Java Province is one of the regions with the potential of small industries in Indonesia. According to Marijan (2005), Central Java is the province with the largest number of small industries in Indonesia with 25.2%. There are several small industries in the city and district in Central Java Province. One such small industry is located in Klaten Regency which has small industries such as pottery, furniture, conventions, metals, boutique, and lurik weaving.

The lurik industry is considered one of the superior products in Klaten regency so that it can illustrate the ability of regions to produce products, create value, utilize resources in real terms, provide employment opportunities, generate income for the community. The government has prospects to increase productivity, investment, and local revenues from this industry (Yasa et al., 2020a; Yasa et al., 2020b). Based on Permendagri No. 9 of 2014 concerning guidelines for the development of regional superior products, the regional economic potential needs to be developed optimally to become a superior regional product that is competitive and can improve the welfare of the community by the conditions and peculiarities of the region.

The economic growth of Klaten regency during 2014 can be seen in the growth of the gross regional domestic product (GRDP) of Klaten regency at a constant 2000 price of 5.79%. The three highest growth sectors are the trade, hotels and restaurants sector by 30.70%, the manufacturing industry sector by 20.34% and services by 15.76%. The role of the processing industry in the regional economy in Klaten regency makes the lurik processing industry one of the superior products in Klaten regency. The lurik weaving industry is the most popular in Klaten because lurik is one of the characteristics of Klaten regency which is a cultural heritage that must be preserved. In 2014, the value of lurik industry production was Rp. 2,437,701,000.00 which is the second-largest production value of superior products after metal, which is Rp. 2,465,284,400.00 and followed by Rp. 2,042,366,400.00.

The role of the processing industry in the regional economy in Klaten regency makes the lurik processing industry one of the superior products in Klaten regency. Based on data from the office of industry, trade, cooperatives, and SMEs in the Klaten regency (2015), the weaving industry (ATM/ATBM) is the third-largest industry. The government is carrying out this preservation by issuing Governor Decree No. 2 of 2010 which requires the use of boutique service clothing every Thursday for civil servants. The policy of the Klaten regency government no. 025/575/08 dated June 25, 2008, regarding the trial of the use of traditional weaving clothes or regional boutique, is one of the efforts of the Klaten District Government to preserve the lurik fabric as a traditional cloth of Klaten regency whose existence began to sink. To obtain quality human resources, education is needed, because education is considered capable of producing high-quality craftsmen, having a modern mindset and way of acting. The development of worker productivity according to the education graduates has increased, especially with the training that can add to the value of the human resource of the worker in addition to the length of experience of the worker.

Theory and Relationship between Variables

The results of previous studies conducted by Tambunan and Woyanti (2012) find that education and social security do not affect labor productivity. They also find that education fails to significantly affect productivity in the workforce. Mahendra (2014) in his research on education did not find a significant effect on the productivity of the small-scale industry in Semarang. Besides, the (long) work experience is expected to affect one's productivity at work. With a high level of education supported by work experience, the craftsmen's workforce will have more opportunities to get jobs. It is estimated that with work experience, prospective job seekers are better off to get suitable jobs with the

field he had experienced. When a worker has a job with his expertise, the worker can maximize his knowledge and skills to increase input and productivity.

The results of an empirical study conducted by Amron, et al. (2009), and Mahendra (2014) shows that work experience can significantly affect work productivity. On the contrary, Haslindah (2010) finds that work experience cannot have a significant effect on work productivity. Besides, age is also estimated to have an effect on one's productivity at work. The age of the craftsmen's workforce is enough to determine the success in carrying out a job, both physical and non-physical. In general, the workforce of older craftsmen has weak and limited physical energy, whereas the workforce of young craftsmen has strong physical abilities. According to the Population Statistics Agency, which has the potential as capital in development, the productive age population is those aged 15-64 years. The empirical study conducted by Haslindah (2010) finds that age can have a significant effect on work productivity. One way to reward employees' work performance is through wages. Wages are seen as an interesting and important problem for small industries because wages have a huge influence on workers. If the wages offered by the company are by the services or sacrifices provided, the craftsmen will still work and be more active in work. Wages are one of the barometers in the measurement of various types of welfare, as hence the Government can play an active role in regulating wages. The Government of Indonesia has regulated the city/district minimum wages so that MSEs cannot cause disputes between employers and workers. This happens because the MSE problem is only seen from one side where a person can live with the salary earned. This thinking is not wrong, but this thought has not been completed. Because the issue of MSEs only touches a part of all workers or the world of work (Setiadi, 2009). The empirical studies conducted earlier by Setiadi (2009), Haslindah (2010), and Tambunan & Woyanti (2012) state that wages can significantly effect on work productivity, while Amron et al. (2009) reveal in their study that there is no significant relationship between work wages and work productivity.

Increasing the productivity of the craftsmen's workforce is the responsibility of various small-scale industries that provide tools, training facilities, and other working conditions, while the craftsmen are obliged to display work ethics, caring attitude, and good discipline, taking the initiative to improve work continuously. To achieve high work productivity, the small industries in Klaten regency need to pay attention to the problems of education, work experience, age and work wages which are the driving factors in achieving work productivity, because with high productivity can guarantee the survival of the business unit. The key objectives of this study are to analyze the influence of education, work experience, age, and wages on the productivity of the workforce of

craftsmen in the small lurik weaving industry in Klaten regency. It is expected that the study would play a pivotal role to increase knowledge in the field of employment in Klaten regency in Indonesia, especially to increase the productivity of the craftsmen's workforce. It is also hoped that the regional government through using policy recommendations of this research would greatly contribute to determining employment policies. Besides, the results of this study would serve to provide information on labor productivity and become a reference for future researchers. Furthermore, it can enrich economics, especially microeconomics regarding productivity theory.

The higher the level of education of a person, the higher the level of productivity or performance of the workforce (Simanjuntak, 2001). In general, people who have higher formal and informal education will have broader insight. The high awareness of the importance of productivity will encourage the workforce concerned to take productive actions (Kurniawan, 2010). From the above research findings, it can be said that the level of education of a workforce has a positive effect on productivity because people with higher education have more knowledge to improve their performance. The age of the workforce is sufficient to determine the success of doing a job, both physical and non-physical. In general, older workers have weak and limited physical power, whereas young workers have strong physical abilities (Amron, 2009).

Work experience is reflected in workers who can work in other places before. The more experience gained by a worker will make workers more trained and skilled in carrying out their work (Amron, 2009). The existence of a workforce who has work experience is expected to get a job by his expertise. The longer a person is in a job that is by his expertise, it is expected to be able to increase his productivity. So, it can be concluded that work experience has a positive influence on labor productivity.

The size of the wages provided by the company to its workers will affect the high and low level of employee productivity (Setiadi, 2009). When a worker feels enough with the wages received, his productivity in work is expected to increase. Adequate wages, in this case, can be interpreted as sufficient wages for the needs of a decent life, which can allow workers to fulfill their needs humanely. So, when the level of income is sufficient, it will lead to a concentration of work and direct the ability to increase productivity (Kurniawan, 2010).

Given the research problems, the objectives of the study and the previous research findings, as well as the theoretical framework of thought, our research hypothesis is as follows:

Education is thought to have a positive and significant effect on labor productivity.

Age is thought to have a positive and significant effect on labor productivity.

Work experience is thought to have a significant effect on labor productivity.

Wages allegedly have a positive and significant effect on labor productivity.

Method

This study is causal-associative research, which seeks the relationship between two or more variables that are causal with independent and dependent variables (Sugiyono, 2013). The study was conducted to determine the effect of independent variables on the dependent variable. The method used in this study is quantitative as it refers to the calculation of data in the form of numbers, then analyzes the same using statistical analysis. In this study five independent variables were used: namely, education, age, work experience, and wages. While the dependent variable in this study is labor productivity. Data collection techniques are the main step in research, which are used in this study in the form of questionnaires, interviews (interviews), documentation, and literature reviews of various published literature, magazines, newspapers, journals, and other sources. Types and sources of data consist of primary and secondary data. According to Sugiyono (2013) population is an area of generalization consisting of objects or subjects that have certain qualities and characteristics set by the researcher to be studied and then conclusions can be drawn.

The population in this study consists of all workers, namely lurik woven craftsmen in Klaten regency. Table 1 shows the population distribution of the respondents.

Table 1 Population Distribution of the Respondents

No.	Districts	Craftsman labor
1.	Cawas district	1,318
2.	Bayat district	274
3.	Karan Dowo	62
4	Trucuk district	60
5.	Pedan district	95
amount		1,809

Source: BPS Klaten Regency 2015

The sample is part of the number and characteristics possessed by the population (Sugiyono, 2013). This sample is taken in proportionate stratified random sampling to get samples from members that are not homogeneous and stratified and proportional.

The sample determination is calculated by the Slovin formula as follows:

$$n \equiv \frac{N}{(1 + (N) (e)^2)}$$

Information:

- n = Number of Samples
- N = Large Population
- e = Level of confidence
(10% = 0.1)

So, the sample size:

$$N = \frac{1,809}{1 + (1,809) (0,1)^2}$$

$$N = 95$$

Furthermore, the determination of the number of research samples using probability sampling technique is by stratified random sampling or also called random sampling stratified. Stratified Random Sampling is a sample determination technique based on subject groups and between one group and another appears to be strata or levels. The following table shows the proportional allocation of research samples

Table 2 Proportional Allocation of Research Samples

No.	districts	Total population craftsmen labor	Number of samples of craftsmen workers
1.	Kec. Cawas	1,318	69
2.	Kec. Freshman	274	14
3.	Kec. Karan Dowo	62	4
4.	Kec. Trucuk	60	3
5.	Kec. Pedan	95	5
amount		1,809	95

Source: BPS Klaten Regency 2015

The reason for using a stratified random sampling technique is because the population has a member or element that is not homogeneous and proportionally stratified. Also, to facilitate the writer in collecting data through questionnaires. From among a total of 95 respondents, only 70 returned to the researcher mentioning the reasons for damage or not being filed properly. So, the researcher decided to use the total sample for this study as 70 respondents.

A good instrument test is marked by two conditions, namely validity and reliability. Data analysis techniques in this study are used as multiple regression models. Multiple regression is an extension of the regression technique when on more than one independent variable to hold the prediction of the dependent variable (Arikunto, 2013). Descriptive statistics are statistics used to analyze data by describing data that have been collected without intending to make conclusions that apply to the general or generalization (Sugiyono, 2013). The coefficient of determination (R^2) means measuring how far the ability of the model is in explaining the variation of the dependent variable. The determination coefficient is between zero and one. F test is used to find out whether all independent variables together can affect the dependent variable. This test is done by comparing the calculated F value with the F table value. The t-test is used to determine how far the influence of an independent variable individually in explaining the variation of the dependent variable.

Result and Discussion

Respondents in this study are as many as 70 workers of lurik woven craftsmen in the representative regency to be stated as the feasibility of respondents in providing information about the identity of the gender, marital status, etc. The below table shows the distribution of respondents by gender.

Table 3 Gender of Respondents

No.	Gender	Labour	Percentage
1.	Women	55	78.6%
2.	Men	15	21.4%
amount		70	100%

Source: The authors' own based on data processed in 2017

The results of the study show that the workforce of lurik weaving in the regency is dominated by women. The key reason is that this work tends to require the expertise of a woman who is also patient in pursuing this work. In this weaving activity, not all of them can be painstaking with the existing stages before weaving, so that many female workers are more comfortable and interested in doing so. Another reason why the workforce is dominated by women is that women rarely work in the field and most of their work is carried out in the room by sitting down while still enjoying their inner peace.

Sometimes there are obstacles faced by these lurik weaving workers in producing good quality work. The following table states the marital status of the respondents as one of the variables.

Table 4 Marital Status of the Respondents

No.	Marital status	Labour	Percentage
1.	Married	35	50%
2.	Unmarried	10	14.3%
3.	Widow	15	21.4%
4.	Widower	10	14.3%
amount		70	100%

Source: The authors' own based on data processed in 2017

From the results of the table as mentioned above, it can be seen that most of the married workers are the very basic reason that the lurik workforce in Klaten regency has a great responsibility both for the family and for their work. Most of them are housewives before they leave to work at home when they finish, this form of responsibility can be seen from the workforce of lurik weaving craftsmen where they can increase their productivity when they work.

The analysis used to test the hypothesis in this study is to use multiple regression. The following table is a summary of the results of testing the hypothesis.

Table 5 Summary of the Results of Testing the Hypothesis

Model	Coef. Predictor	t-count	Sig.	R	R Square	F
Constant (k)	0.869	1,683	0,000			
Education	0.265	2,249	0.028			
Age	0.778	3,676	0,000			
Crawl	0.312	2,163	0.034			
Wages	0.035	0.288	0.774			
Summary				0.668	0.447	
Regression			0,000			13,116

Source: The authors' own

The results in the table mentioned above show that the number of coefficient R is 0.668 while R2 is 0.447. The value of R shows a positive value, this means that education, age, work experience, and work wages together have a positive influence on the work productivity of workers in lurik weaving in Central Java. the R2 value of 0.447 shows that the variance in work productivity of lurik woven craftsmen can be explained by education, age, work experience, and work wages by 44.7% through the model, while 55.3% comes from other variables not used in this model. The contribution test was found to have a value of F in the above table of 13.166 with a significance of 0.000. The significance value produced is less than 0.05, so it can be said that simultaneously education, age, work experience, and worker wages have a significant influence on the

work productivity of labor workers in lurik woven craftsmen. Thus, it can also be interpreted that education, age, work experience, and work wages have a positive effect simultaneously on the work productivity of labor workers of lurik woven craftsmen so that the hypothesis is accepted.

1) The Influence of Education on the Workforce Productivity of Lurik Woven Craftsmen in Klaten Regency

The first hypothesis in this study states that education affects work productivity. Educational variables have a positive effect on the productivity of the labor of lurik weaving craftsmen, which is indicated by a positive line coefficient and a significant value of less than 0.05 that is 0.028 thus, the higher the education the workers will possess the higher productivity of the work of lurik woven craftsmen will take place. According to Sedarmayanti (2009), one of the factors that influences work productivity is education. Someone who has higher education will have a broader insight, especially an appreciation of the importance of productivity. Education is meant for formal and non-formal education. The high awareness of the importance of productivity will encourage employees to take productive actions. The results of this study are also supported by research conducted earlier by Machasin (2007). Her research concludes that education partially has a positive and significant effect on work productivity. However, the results of her study contradict the research of Tambunan & Woyanti (2012), and Mahendra (2014) as the results of their research show that education has no significant effect on the productivity of small industrial labor.

The fact is that the average workforce of lurik woven craftsmen is very minimal in education, namely their education level is up to primary school. However, this level of education does not affect their productivity. This is because even though they have low formal education, they are equipped with adequate non-formal education and as such, they can produce well. Therefore, non-formal education is considered as a benchmark for workers in the lurik woven industry in Klaten regency.

2) Effect of Working Age on Labour Productivity of Lurik Woven Craftsmen in Klaten Regency

The second hypothesis in this study states that age has direct effects on labor productivity. Age variables have a significant positive effect on the labor productivity of lurik woven craftsmen, which is indicated by a positive line coefficient value and a significant value of more than 0.05, namely 0.000. So, it can be concluded that the age variable, partially has a significant effect on labor productivity in the small industry of lurik weaving. Thus, the

second hypothesis is accepted. This means that the higher the age of the workforce affects the lower the productivity of the workforce, and vice versa if the working-age is low in influencing the work productivity will also be high. From the results of empirical studies were conducted by Amron et al. (2009), and Mahendra (2014) it is shown that work experience can significantly affect work productivity, but on the other hand Haslindah (2010) states that work experience cannot have significant effects on work productivity. However, the contradiction of the results of this study is in line with the previous research, which was conducted by Panpapotan (2013).

The results of the research show that age does not affect the productivity of employees of PT. Gandum Malang. The results of this study are based on the theory proposed by Hordock in Simanjuntak (2005) and claim that a person's attitude in work is the basis for the selection of work. A person's attitude towards work about the work environment that consists of leadership, work environment, time and working hours is important enough to affect the quality of work carried out by the person concerned but also the attitude in facing the upcoming retirement.

The fact that occurs in the small industry of lurik weaving is that the workforce is dominated by 39 years because at that age the level of maturity appears to be in the form of work responsibilities. The more people are mature, they have higher attitudes and responsibilities. Another reason is that at this age they are more enthusiastic about working because they feel comfortable at work and have great attachments with their work so that irrespective of the work environment they are better able to work in the small industry.

3) Effect of Work Experience on Labor Productivity of Lurik Woven Craftsmen in Klaten Regency

The third hypothesis in this study states that work experience affects work productivity. Variable work experience of labor productivity of lurik weaving craftsmen, which is indicated by a positive line coefficient and a significant value of less than 0.05 that is 0.034 thus, the longer and more work experience the craftsmen gain the better productivity of the craftsmen's workforce in the small weaving industry is achieved. Work experience is a person's skills and abilities in carrying out the work that is being done. A person's work experience will affect work productivity because those who are experienced will be more familiar and skilled at work. Also, the longer a person's work experience the more it will affect his work productivity to increase.

Work experience is a measure of the length of time or period of work that someone has spent in understanding the tasks of a job and has performed it well (Khoirul, 2012). Syafaruddin (2001) added that the experience of an employee has a value that is very valuable for the interests of his career in the future. The fact is that the workforce in the small industry of lurik weaving has had a long period of work because young workers choose workplaces that do not require accuracy or patience. The working period that can be seen is the workforce that has been engaged in work for decades, which proves that with their experience working to produce good work productivity.

4) Effect of Work Wages on Labor Productivity of Lurik Woven Craftsmen in Klaten Regency

Based on the hypothesis test undertaken, the level of effluent has no significant effect on the productivity of small-scale lurik weaving labor in Klaten regency. This can be seen with a positive line coefficient but not significantly more than 0.05, namely 0.774 so it can be concluded that the wage level partially has no significant effect on the productivity of the craftsmen's workforce in the small industry of lurik weaving. Thus, the fourth hypothesis is rejected. Based on the results of the above research, it is known that the wage level is positive but not significant to labor productivity in the small industry of lurik weaving in Klaten regency. This means that the higher the workers wages are given are unable to increase productivity. The results of this study contradict the previous empirical study was conducted by Setiadi (2009), Haslindah (2010), Tambunan & Woyanti (2012), which state that wages can affect work productivity significantly, while the results of this study are in line with Elqadri et al., (2015) stating that there is no significant relationship between work wages and work productivity.

Adequate wages, in this case, can be interpreted as sufficient wages for the needs of a decent life, which can allow workers to fulfill their needs humanely. Therefore, when the level of income is sufficient, it will lead to a concentration of work and direct the ability to increase productivity (Kurniawan, 2010). The fact proves as to why the labor wages are not able to provide an increase in labor productivity in the small industry of lurik weaving in Klaten regency. The first work system that was carried out still uses familial management and the sense of belonging to one another is very high. That means, sometimes there is a family of colleagues who get a disaster but help each other to work, so they will be in a position to share the wages according to the agreement. Feeling comfort at work encourages workers to complete their work. This is because the form of loyalty in the workplace is due to bad habits when we stay at home and have the philosophy of cultural principles that is "eat not eat as long as you can get together with

your friends, not only we can get a job but also we can produce the job". This is what drives why work wages do not significantly affect work productivity. The third cause is that the wages they receive are not comparable to their daily expenses, but this always encourages them towards the fact that not only is the wage they want to achieve but purely because the existence of togetherness helps increase the productivity of craftsmen in the lurik weaving industry in Klaten regency.

Conclusion

Based on the results of the analysis and discussions as stated above, the conclusions of our study can be drawn as follows:

1. Education influences labor productivity in the small industry of lurik weaving in Klaten regency. Because the higher the level of education - both formal and non-formal, the higher the productivity is. This is because the person will have the ability and skills in completing a job well; better performance will increase productivity.
2. Age affects labor productivity in small lurik industries in Klaten regency. Because at an adult age, also in case of gaining more maturity, a person is can be more responsible for his family and work well, therefore it makes an impact on his work performance and productivity in a better manner.
3. Work experience has an effect on the productivity of labor in the small industry of lurik weaving in Klaten regency. The reason which lies behind this is that workers who are experienced in working can work better than inexperienced people. This is because people who have just adapted to the new work environment need time to adapt and have not been able to overcome the problems that occur. Given that, our study finds that work experience can provide an increase in labor productivity in the lurik woven industry.
4. Work wages have no effect on the productivity of labor in the lurik weaving industry in Klaten regency. The reason is that the encouragement is not oriented to high wages, but the craftsmen's focus was on the togetherness of business owners and their workforce. So, the results show that a comfortable and pleasant working environment can make them survive even with very low wages. Given that, for craftsmen, the wages are not a factor of the causes of productivity enhancement.

Suggestions

We make some suggestions that emerge from the study, which are summarised as follows:

- 1) The business owners of small lurik weaving industries in Klaten regency may always provide training for workers to increase their creativity in innovating lurik weaving products that have an impact on their productivity.
- 2) To foster the small businesses in Klaten they need to be more organized both in terms of capital and marketing.
- 3) The local government should always support the small businesses in Klaten regency through organizing events and programs either by exhibiting or making collaborations with the central government. This can be achieved by making a comprehensive policy for employees to wear a boutique lurik throughout Indonesia.
- 4) For future research on this topic, it is expected from the relevant stakeholders to conduct a more comprehensive research model in uncovering what is behind the phenomenon of the productivity craftsmen's workforce in the small-scale industry in Klaten.

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