Factors that Affect Productivity of Workers in the Farming and Processing Industry Sectors

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Abstract

In general, this study aims to analyze the effect of the sectoral attractiveness, individual characteristics, and suitability of job options on the productivity of workers in the agricultural sector and manufacturing industry in East Java, by using a structural equation model (Structural Equation Modeling/SEM) and by the application program AMOS (Analysis of Moment Structures). The study shows that the sectoral attractiveness and individual characteristics significantly influence the productivity of workers in both agriculture and manufacturing industry. But as an intermediary variable, the suitability of job options variable has no significant effect on worker productivity. Thus, the effects of sectoral attractiveness and individual characteristics on the productivity of workers are direct, without going through the suitability of job options.

Keywords: *sectoral attractiveness, individual characteristics, suitability of job options, productivity of workers*

I. Background

In general, a developing country undergoes a change in economic structure when development is carried out. A change in economic structure will narrow down in one direction, which is a change in economic structure from the farming sector to the non-farming (off-farm) sector. Chenery and Syrquin (1975) have the opinion that empirically, economic structure transformation will be in line with an increase in income per capita. When people income per capita increases, there will be a shift in economic structure, where what was once dominated by the primary sector (farming) will become dominated by non-primary sectors such as industry, trade, and service. This increase in people income per capita is none other than because there is an increase in worker productivity in non-primary sectors. In another opinion, Usui (2011) states that economic structure transformation can occur through three dimensions: (i) economic activity output will shift from goods or services with low productivity levels to those with higher ones; (ii) the absorption of workers will shift from the primary sector to the modern industrial sector; and (iii) the export of goods will become more varied and sophisticated.

Table 1. Contribution of Labor Absorption and GDRP Based on Economic Sectors in East Java

Economic Sector	**2008**		**2009**		**2010**	
	Labor Absorption Contribution	GDRP Contribution	Labor Absorption Contribution	GDRP Contribution	Labor Absorption Contribution	GDRP Contribution
Farming	44%	16%	43%	16%	12%	15%
Processing Industry	13%	26%	12%	26%	13%	25%
Services	44%	58%	45%	58%	44%	60%
Total	100%	100%	100%	100%	100%	100%

Source: BPS East Java, 2011

In East Java, the past three years have shown that there has been a phenomenon of economic structure shift (see Table 1). This phenomenon can be seen through two things: (i) the absorption of workers in East Java which tended to decrease in the farming sector and instead increased in the industrial sector and (ii) the added value (GDRP – Gross Domestic Regional Product) produced by the industrial sector which is more dominant than the farming sector.

Looking at workers' productivity in both sectors, the farming sector has a lower worker productivity value (see Table 2), while the industrial sector has a higher worker productivity value. This fact shows that the viewpoint of Chenery and Syrquin is more suitable in describing the condition of economic structure transformation in East Java.

Table 2. Worker Productivity Based on Economic Sectors in East Java, in 2000 Rupiah Constant

Economic Sector	2008	2009	2010
Farming	5,997,956.61	6,058,081.73	6,459,618.07
Processing Industry	32,950,457.95	34,916,624.79	35,013,812.41
Services	21,391,210.36	21,705,757,63	24,652,496.30
Average	16,148,615.96	16,620,573.51	18,304,196.33

Source: BPS East Java, 2011

The low worker productivity in the farming sector will cause low economic growth in both cities and villages, and furthermore, high worker absorption will certainly slow down economic growth. According to a research done by Jeon (2011), samples in the two countries of Indonesia and Korea have shown that low worker productivity in the farming sector in both countries have not yet brought positive effects toward an increase in economic growth. Meanwhile in the industrial sector, even though worker productivity has the highest value and tends to increase, its contribution toward the GDRP in the last three years has tended to decrease. This is something to be noted, where it can be indicated that the industrial sector in the last three years has experienced slower growth compared to other sectors (services). The global crisis that has spread to many parts of the world including Indonesia could be the reason for the phenomenon of the slowing down of the industrial sector in East Java.

For that, it is crucial to explore what factors affect the productivity of workers in both sectors. The goal for this research is to determine the factors that affect the productivity of workers in the farming sector and processing industry in East Java. In this regard the factors that will be examined are sectoral attractiveness, individual characteristics, and suitability of job options. By determining just what factors affect worker productivity in both sectors, hopefully this can be used as a reference in creating the right public policies to increase social welfare. Furthermore, this paper would like to discuss several things. In Part 2 the theories used are explained. Part 3 will explain the framework of the research and Part 4 will explain the methods that are used. The results and its discussion will be explained in Part 5, and Part 6 will end the paper with conclusions and suggestions.

II. Theoretical Review

In explaining the factors that affect worker productivity in the farming sector and processing industry, the theoretical concepts that support this research are related to labor productivity, labor and enterprise structure, theories that explain production, and Kotler's theories which explain the factors that affect interests of workers to work in the industrial and farming sector. Each concept is explained further in the following subsections.

2.1. The Concept of Labor Productivity

The understanding of productivity is different than the understanding of production, effectiveness, efficiency, and probability. There are at least four things that common people relate most often to productivity but in actuality is not the understanding of productivity itself. The four things are: (i) productivity is not production, (ii) productivity is not effectiveness, (iii) productivity is not a measurement of work, and (iv) productivity is not profitability. According to Winardi (1997), productivity is a concept that relates the connection between output and input as a main element; this was conceptualized for the first time by David Ricardo with Adam Smith around 1810. As for the measurement of labor productivity, the simplest way is to compare output and input..

As an example, measuring the productivity of a garment factory can be done by comparing how much time is needed to create a garment product from all the sewing machines operated by a single employee (USAID, 2005). The factors that determine the labor productivity are, among others, human resources, capital spending, innovation, company character and management, and open market and competition (Palmade, 2005; in USAID, 2005).

2.2. Workers and the Structure of Business

According to Law No. 13 of 2003 regarding workers, what is meant by "worker" is any person who is able to perform a job in order to produce goods and/or services whether to fulfill his/her own needs or for society. From this understanding, it can be determined who are considered workers or not. Generally workers can be differentiated into two groups: (i) those in the work force and (ii) those not in the work force. Those not in the work force are composed of (i) those in school, (ii) those who manage households, and (iii) those who receive income. At certain times, those not in the work force can enter the work force if the people in that group offer their services to work. Because of that, this group is often called the potential work force. In the economy, workers can be grouped according to sectors. This division based on sectors is determined by the business sector that the worker is involved in. There are at least nine business sectors which in general gives contributions to the economy (Gross Domestic Product), which are: (i) the farming sector, (ii), the mining and digging sector, (iii) the manufacturing industry sector, (iv) the electricity, gas, and clean water sector, (v) the building sector, (vi) the trade, hotel, and restaurant sector, (vii) the communication and transportation sector, (viii) the financial, lending, and business sector, and (ix) the services sector (*Jawa Timur Dalam Angka*, 2010).

2.3 Theory of Production

In the classical economy theory, workers are an important input for a company to become a part of the primary capital for production. The success of a company is directly related to the productivity of the workers. If the workers of a company have high productivity, then the company will earn high profits also. Conversely, the company will incur losses if the workers' productivity decreases. The problem of productivity is always connected to production. Every production process will use up some amount of resources (input) to obtain certain outputs. Resources as inputs consist of several production factors, such as land, machines, tools, raw materials, and human resources (workers and entrepreneurship). These production factors are combined and transformed by the company as an economic unit in the form of output (goods and production services).

The production function is an equation which shows the maximum output which results from a certain combination of inputs. The relationship between the output amount (Q) with the inputs used in the production process (X_1, X_2, X_3, … X_n) can be written out mathematically as follows:

$$Q = f(X_1, X_2, X_3, \ldots X_n)$$

Where:

Q	= Production level (output)
X_1, X_2, X_3, … X_n	= Production factors used (input)

If the input used in the production process only consists of capital (K) and workers (L), then the production function can be formulated as:

$$Q = f(K, L)$$

Where: Q = output; K = capital input; and L = worker input.

2.4. Kotler's Framework

Kotler's framework is the primary reference in this research. This is because the variables that become the component in determining the effect of worker productivity toward the farming and industry sector in this research will be summarized from literature based on Kotler's framework. According to Kotler's (1997) framework, it has often been questioned in industrialization efforts just what manufacturing subsectors or industries are appropriate to be developed. There are a few steps that go into answering this question.

The first step is to identify the determining factors, where those determining factors are composed of the industry attractiveness type factors and competition type factors. These attractiveness factors are made up of: (1) high added value per worker (productivity), (2) related industries, (3) future competitiveness, (4) industry specialization, (5) export potential, and (6) domestic demand prospects. The competition factors include among others: (1) industrial ability evaluation and (2) industrial ability development. Those that are included in contributing factors to industrial attractiveness can be grouped into four types:

(1) market factors, (2) competition factors, (3) financial and economic factors, and (4) technological factors. Further, competitive superiority or potential ones, in determining industrial ability, depends on competitiveness of its factors, which are the relative strength of production factors, which includes physical resources, human and technological resources, and the competitiveness or relative strengths of companies in that area.

The second step in determining the industrial profile is to formulate the current industrial vision. This is important, because without a clear vision from the people and government in a region, it is impossible for that region to build a competitive industry sector. *The third step* is to identify the appropriate supporting strategy. Examples include technological development strategy, improvement of human resource quality, and the development of infrastructure. From this outline of Kotler's framework, it can be concluded that the factors that determine industrial and farming sector attractiveness in this study are work opportunity, market, wages, and technology factors.

III. Research Methods

To explain the factors that influence the productivity of workers in the farming and processing industry sectors, the survey method is used in this research. Singarimbun (1989) explains in his words that "…research with the survey method is a research that extracts a sample from the population and uses a questionnaire as the chief tool for data collection…" Based on the social research category, this research is an explanatory research, where several variables are examined for their influence relations. Furthermore, this research uses the Cross Sectional Study approach, which is done by taking a snapshot of a condition at a certain time. The unit of analysis is workers in the farming and processing industry sectors in East Java. The population in this research consists of residents who are 15 years of age or older that work in the farming and processing industry sectors in East Java Province. In 2000, the population of this kind in East Java numbers to 3,003,291, where (i) 1,510,132 people work in the farming sector and (ii) 1,493,159 people work in the processing industry sector.

Keeping in mind that the number of this population is known, determining the sample size for this research will be done using a formula (Lemeshow et al., in Pramono and Kustanto, 1997) as follows:

$$n = \frac{\left(z1-\frac{a}{2}\right)^2 \times P(q) \times N}{(d)^2 \times (N-1) + \left(z1-\frac{a}{2}\right)^2 \times P(q)}$$

Where:

n = sample size (number of respondents)
N = size of population (reference number of population)
z1 – a/2 = normal standard value which depends on a; if a = 0.05, then z= 1.960, and if a = 0.01, then z = 2.576
d = amount of tolerable deviation; the smaller the value, the more accurate the research – example values are d = 1% or d = 5%
P = population proportion estimator (if P = 0.05, the sample size n will be maximized)
q = 1 – p or (1 – 0.5) = 0.5

From the above formula, the sample for this research is determined to be 384 people. Meanwhile, the distribution of samples to each sector is done proportionally, using the following formula:

$$ni = \frac{Ni}{N} \times n_{sector}$$

Where:

ni = total sample of sector *i*
Ni = total population of sector *i*
N = total reference population
n_{sector} = total sample of a sector

As such, the samples on each of the sectors are the following: (i) 193 people are sampled in the farming sector and (ii) 191 people are sampled in the industry sector. According to Fraenkel and Wallen (1993), in Sigit (1990), the suggested minimum sample size for a correlational research is 50 subjects. Based on this opinion, the sectoral samples above have fulfilled the requirements for analysis.

Next, the sampling method for this research is done through several stages. The first stage is to determine the regencies based on the consideration of Regional Development Units (Satuan Wilayah Pengembangan – SWP) and through purposive sampling. Considering that in East Java there are nine RDUs (SWP), one regency will be taken from each of these. Thus there are nine regencies which will be used as the sample for this research. The nine regencies are the Gresik, Pamekasan, Banyuwangi, Jember, Probolinggo, Malang, Tulungagung, Magetan, and Tuban regencies. The second stage, determining sub-regions, is done using purposive sampling, where two sub-regions are selected from each district. The selection of these sub-regions are based on the consideration of the number of workers in the farming and processing industry sectors available in that sub-region, as well as the total production that results from the farming and processing industry sectors.

The third step is to determine the villages. Determining the villages is done by purposive sampling, where two villages are taken from each sub-region. The consideration for village determination is the same as for determining the sub-regions. The fourth stage is the determining of respondents. The determining of respondents is done through stratified random sampling, where the respondents to be researched are differentiated into two groups: (i) respondents who work in the farming sector and (ii) respondents who work in the processing industry sector. The steps taken in this stage are the following: *first*, village officers are questioned for the number and primary occupation of residents; *second*, residents who have the same primary occupation as the criteria are listed; and *third*, the respondents are determined by drawing lots.

3.1. Operational Definition of Variables

1. Sectoral Attractiveness Factor (X1): The social attractiveness factor that is meant in this research shows a condition that can be used as a consideration for workers in making a decision to choose an occupation. Further, this sectoral attractiveness factor as an independent variable is made up of four dimensions (Kotler et al., 1997):

a. Work Opportunity (k), made up of six indicators:
(i) Work opportunity information (k1)
(ii) Work opportunity chance (k2)
(iii) Competition in obtaining work (k3)
(iv) Development of the working sector (k4)
(v) Requirements for work (k5)
(vi) Chance to obtain capital facilities (k6).

b. Market (p), made up of five indicators:
(i) product market information (p1)
(ii) product demand (p2)
(iii) market reach (p3)
(iv) fulfillment of products (p4)
(v) product prospects (p5).

c. Wages (u), made up of four indicators:
(i) Information on wages (u1)
(ii) Amount of wages (u2)
(iii) Appropriateness of wages to work load (u3)
(iv) Hope for wage increases (u4).

d. Technology (t), made up of six indicators:

(i) Understanding of the use of technology (t1)

(ii) Mastery of technology (t2)

(iii) Increase in mastery of technology (t3)

(iv) Appropriateness of technology use (t4)

(v) Influence of technological changes (t5).

2. Individual Characteristics (X2): Individual characteristics are factors that are present in the self of an individual, which can change due to the environment. This variable of individual characteristics is made up of three dimensions:

a. Level of Education (f), made up of one indicator, length of time in education spent by a respondent (f1).

b. Culture (b), made up of six indicators:

(i) Parents' occupation (b1)
(ii) The presence or absence of parents' influence in choosing an occupation (b2)

(iii) The amount of parents' influence (b3)

(iv) The desire of the parents to nurture (b4)

(v) The desire of the parents to stay close (b5)

(vi) The desire of the parents for their children to have the same occupation as them (b6).

c. Social Status (s), made up of three indicators:

(i) job status (s1)

(ii)work facilities and infrastructure (b2)

(iii) occupational routines (s3).

3. Suitability of Job Options (I): The tendency of a respondent not to transfer from a previous job means that this is due to occupational suitability. This occupational suitability is an intervening variable. The measurement of this variable uses four indicators:

(i) respondent's goals regarding the occupation (I1)

(ii) wages from previous occupation (I2)

(iii) occupational environmental conditions (u3)

(iv) management of previous occupation (u4).

4. Worker Productivity (Y): Productivity generally can be defined as a comparison between the achieved results and all the resources that were used. The worker productivity variable in this research is obtained to depict production conditions and production costs for workers that work in the farming and processing industry sectors. The measurement used for the variable of worker productivity is the ratio of outputs to inputs. Furthermore, this variable will measure the comparison between total production (output) resulting from workers, with the production expenses (input) that a worker spends within one year in the farming and processing industry sectors.

3.2 Research Instruments

The research instrument that will be used in this research is a questionnaire. The instrument, in its technical scale form to be used to measure research variables, will be tested for both validity and reliability. Validity testing is done by testing both content validity and construct validity. Reliability testing is done using an internal consistency approach with *Alpha Cronbach* (Maholtra, 1996).

3.3 Data Analysis Techniques

In accordance with the goals of the study, the data analysis in this study will be carried out by using Structural Equation Modeling (SEM), which is assisted by the application program AMOS, or Analysis of Moment Structures (Arbukle, 1997). Analysis using version 4.1 of the AMOS program is also used to identify a good structural equation model (Arbukle, 1997). In line with the method to be used which is structural equation modeling, which entails several assumptions, some assumption tests are necessary as well. The following are the assumptions that must be fulfilled in the data collection and analysis procedures which are analyzed using SEM: (i) SEM assumptions (sample size, normality and linearity, outliers, multicollinearity, and singularity), (b) suitability and statistical tests, (c) reliability test, (d) model modification and interpretation, and (e) hypothesis and relationship test.

To evaluate the model, this study requires the goodness of fit test indices. The tests for these are chi-square, significance probability, relative chi-square, the root-mean-square error of approximation (RMSEA), comparative fit index (CFI), and Tucker-Lewis index (TLI). The relationship between independent and dependent variables in this research can be described in function form as follows:

Sectoral Attractiveness	= f (work opportunity, market, wages, technology)
Individual Characteristics	= f (education, culture, social status)
Suitability of Job Options	= f (sectoral attractiveness, individual characteristics)
Productivity	= f (sectoral attractiveness, individual characteristics, suitability of job options)

IV. Results and Discussion

This part will explain the results of the results of the SEM model estimation which uses AMOS as the statistical software. As per the model which has been designed in the research methods discussion, the discussion of this research will start by explaining how the factors of sectoral attractiveness and individual characteristics affect the suitability of job options of the farming and processing industry sectors. Then, the direct effects of the factors of sectoral attractiveness and individual characteristics toward productivity are explained, and finally, the effect of suitability of job options toward productivity in the farming and processing industry sectors are explained.

4.1. The Effect of Sectoral Attractiveness toward Suitability of Job Options

Based on the calculation of AMOS 4.1, it is known that with a significance level of 1%, at df = 445, the factor of sectoral attractiveness affects significantly but has a fix relation toward the suitability of job options in the farming sector. The size of the influence is positive at 0.067 (fix). This means that the better the attractiveness of the occupation sector in the farming sector, the more appropriate the job options in that sector tend to be.

Meanwhile, in the processing industry sector, with a significance level of 1%, at df = 427, sectoral attractiveness also affects significantly but has a fix relation toward the suitability of job options in the processing industry sector. The size of the influence is positive at 0.079 (fix). This means that the better the attractiveness of the occupation sector in the processing industry sector, the more appropriate the job options in that sector tend to be.

Table 4.1. The Influence of Sectoral Attractiveness toward Suitability of Job Options

Sector	**Path Coefficient (p value)**	**Result**	**Loading Factor**			
			Work Op.	**Market**	**Technology**	**Wages**
Farming	0.067 (fix)	Accepted	0.631	0.874	0.684	0.587
Processing Industry	0.079 (fix)	Accepted	0.585	0.450	0.583	0.441

Source: AMOS 4.1 estimation results

When the results of this research is evaluated further in terms of its supporting dimensions, then the dominant roles of the dimensions in supporting sectoral attractiveness in the farming sector is as follows, in order from most to least: (i) market, (ii) technology, (iii) work opportunity, and (iv) wages.

In the processing industry sector, those dimensions have the following dominance order, from most to least: (i) work opportunity, (ii) technology, (iii) market, and (iv) wages.

The result regarding dominant roles in supporting sectoral attractiveness in the farming sector, which in this research is found to be from the market dimension, is in line with the opinion of A.T. Mosher (1996 in Hanani et al., 2003) where it is stated that in achieving progressive farming, there are some key requirements that need to be met. The most primary requirement is the availability of a market for farm products. Other requirements include technology that always changes, the availability of a local and continuous production environment, the existence of stimulation to produce, and smoothly operating means of transportation. In the processing industry sector, it turns out that the wages dimension is not the supporting primary dimension for sectoral attractiveness. As such, this result is not in line with the opinion of Haris-Todaro (1997), where they state that the transfer of workers from the farming sector to the processing industry sector occurs because the rate of expected wages in the industrial sector is greater compared to the farming sector.

4.2. The Effect of Individual Characteristics toward Suitability of Job Options

Based on the calculation of AMOS 4.1, it is known that with a significance level of 1%, at df = 445, the factor of individual characteristics affects significantly but has a fix relation toward the suitability of job options in the farming sector. The size of the influence is positive at 0.337 (fix). This means that the better the individual characteristics in the farming sector, the more appropriate the job options in that sector tend to be.

Table 4.2. The Influence of Individual Characteristics toward Suitability of Job Options

Sector	**Path Coefficient (p value)**	**Result**	**Loading Factor**		
			Education	**Culture**	**Social Status**
Farming	0.337 (fix)	Accepted	0.239	-0.503	-0.038
Processing Industry	-0.076 (fix)	Accepted	0.973	0.104	-0.208

Source: AMOS 4.1 estimation results

As for the processing industry sector, with a significance level of 1%, at df = 427, individual characteristics also affects significantly but has a fix relation toward the suitability of job options in the processing industry sector. The size of the influence is negative at -0.076 (fix). This means that the better the individual characteristics in the processing industry sector, the less appropriate the job options in that sector tend to be.

The supporting dimensions of individual characteristics toward the farming sector have positive and negative effects. The education dimension has a positive effect, while the other two dimensions of social status and culture have negative effects. In the processing industry sector, the positive effects come from the education and culture dimensions, while the negative effect comes from the social status dimension. In the farming sector, it was found that in the culture dimension, the role of the parents in shaping and instilling culture in their children has a strong relationship toward job options. From the side of the social status dimension, respondents say that in choosing an occupation, the social status of the occupation to be undertaken must also be considered.

In the processing industry sector, the dimension of education is the dominant dimension in shaping individual characteristics. This is deeply related to the effect of individual characteristics which is negative toward the suitability of job options. There are at least two important reasons that can explain this result: (i) better individual characteristics which have been formed by the dimension of education can cause an individual to have a greater chance to obtain work despite the fact that work tends to be less suitable, and (ii) empirically due to the drawn-out economic crisis work opportunities have also become limited, so the chance to obtain a job at this time must go through tight competition, which is on one hand caused by the increase of new job seekers and on the other hand caused by the limited work opportunities.

4.3. The Effect of Sectoral Attractiveness toward Productivity

Based on the calculation of AMOS 4.1, it is known that with a significance level of 1%, at df = 445, the factor of sectoral attractiveness affects significantly but has a fix relation toward the productivity of workers in the farming sector. The size of the influence is positive at 0.431 (fix). This means that the higher the sectoral attractiveness of the farming sector, the higher worker productivity in that sector tends to be.

Table 4.3. The Influence of Sectoral Attractiveness toward Productivity

Sector	Path Coefficient (p value)	Result	Loading Factor			
			Work Op.	Market	Technology	Wages
Farming	0.431 (fix)	Accepted	0.631	0.874	0.684	0.587
Processing Industry	-0.127 (fix)	Accepted	0.585	0.450	0.583	0.441

Source: AMOS 4.1 estimation results

In contrast, in the processing industry sector, with a significance level of 1%, at df = 427, the factor of sectoral attractiveness affects significantly but is negative and has a fix relation toward the productivity of workers in the processing industry sector. The size of the negative influence is -0.127 (fix). This means that the better the sectoral attractiveness in the processing industry sector, the lower worker productivity in that sector tends to be. Seen from the supporting dimensions, the dominant role of the four dimensions of sectoral attractiveness in the farming sector, in order from most to least are market, technology, work opportunity, and wages. In the processing industry sector, meanwhile, the one with the most dominant role is work opportunity, followed by technology, market, and wages.

With respect to the explanation regarding the supporting dimensions of sectoral attractiveness and its relationship with worker productivity in the farming sector, some things can be exposed in this study, regarding why sectoral attractiveness affects worker productivity positively. *First,* workers in the farming sector seems to have a relatively good understanding regarding final product prospects, the technology being used, work opportunity chances, and the size of wages earned. *Second,* the perceptive understanding of the market, technology, work opportunity, and the perception of the size of wages in the farming sector, which tends to be well, can push workers in the farming sector to work optimally, or in other words to increase their productivity.

In the processing industry sector, there are two things that can explain the result of the findings. *First,* the domination of the work opportunity and technology turns out to be unable to encourage workers in the processing industry sector to increase their productivity. This is because the dimension of wages is still strategic in determining worker productivity. *Second,* with the domination of the technology dimension and the lack of dominance of the wages dimension, this shows that the support of workers' understanding of technology is already good, but is not balanced with appropriate wages, and thus causes a decrease in worker productivity.

4.4. The Effect of Individual Characteristics toward Productivity

Based on the calculation of AMOS 4.1, it is known that with a significance level of 1%, at df = 445, the factor of individual characteristics affects significantly but has a fix relation toward the productivity of workers in the farming sector. The size of the influence is negative at -0.264 (fix). This means that the better the individual characteristics in the farming sector, the lower worker productivity in that sector tends to be.

Table 4.4. The Influence of Individual Characteristics toward Productivity

Sector	Path Coefficient (p value)	Result	Loading Factor		
			Education	Culture	Social Status
Farming	-0.264 (fix)	Accepted	0.239	-0.503	-0.038
Processing Industry	-0.217 (fix)	Accepted	0.973	0.104	-0.208

Source: AMOS 4.1 estimation results

While in the processing industry sector, with a significance level of 1%, at df = 427, individual characteristics also affects significantly but is negative and has a fix relation toward the productivity of workers in the processing industry sector. The size of the negative influence is -0.217 (fix). This means that the better the individual characteristics in the processing industry sector, the lower worker productivity in that sector tends to be. The supporting dimensions of individual characteristics in the farming sector have both positive and negative effects. The education dimension has a positive, though small, effect, while the other dimensions of social status and culture have negative effects. As for the processing industry sector, positive effects result from the education and culture dimensions, and a negative effect results from the social status dimension.

The further explanation as to why individual characteristics affects worker productivity negatively is as follows: (i) when seen from the supporting dimensions, the dimensions of social status and culture in this study turn out to weaken the formation of individual characteristics, even though both dimensions have a significant influence, because both dimensions have negative effects, and (ii) based on the large role of the measurement indicators of the culture and social status dimensions, as well as the small role of education, as individual characteristics become better, they do not help to increase worker productivity. Next, the negative influence of individual characteristics toward worker productivity in the processing industry sector can be explained as follows: (i) the social status dimension, which has a negative role, turns out to weaken the dimensions of education and culture in shaping individual characteristics, so the effect of individual characteristics toward worker productivity becomes negative, and (ii) in the formation of individual characteristics, the education dimension alone is not enough, for rather it must be supported by all three dimensions at the same time to increase worker productivity.

4.5. The Effect of Suitability of Job Options toward Productivity

Based on the calculation of AMOS 4.1, it is known that with a significance level of 1%, at df = 445, the variable of suitability of job options does not have a significant effect toward worker productivity in the farming sector because the probability value is 0.610 (larger than the established significance level). This means that whether or not the job options undertaken by respondents are suitable, they turn out not to have an influence on worker productivity in that sector. Meanwhile in the processing industry sector, with a significance level of 1%, at df = 427, the variable of suitability of job options also does not have a significant influence toward worker productivity, where the probability value is 0,353. There are at least two reasons that support these findings: (i) empirically, work opportunities are known to be limited on one hand, and on the other hand, there is a large number of job seekers. Thus it is not very realistic that in these conditions job seekers are still thinking of seeking jobs that are truly appropriate to their selections and (ii) making the decision to select a job in the farming sector or the processing industry sector seems to show the indication that there is a tendency for the reason of having enough time for a side job to come up.

4.6. Scientific Findings

Based on the previous analysis results and discussion, there are several findings in this research that are considered scientific findings, which are among others:

First, there are four dimensions that support the variable of sectoral attractiveness, which are among others work opportunity, market, wages, and technology, while there are three dimensions that support individual characteristics, which are among others education, culture, and social status. The four dimensions that shape sectoral attractiveness and the three that shape individual characteristics as mentioned above are related to one another.

Even so, the dominant role of each of those dimensions in shaping the variable of sectoral attractiveness as well as the variable of individual characteristics are found to have different patterns that occur in the farming sector and the industry sector.

Second, in both the farming sector and the processing industry sector, it was found that the dimension of culture still turns out to have a dominant or strong role in shaping the variable of individual characteristics. What is meant by culture is the culture that is shaped by family relationships, which in this case is the influence of parents, and as such tends to weaken the formation of the variable of individual characteristics.

Third, the influence of the variables of sectoral attractiveness and individual characteristics toward productivity turns out to be found not through the suitability of job options (which is an intervening variable), but rather, the said influence of the variables of sectoral attractiveness and individual characteristics toward productivity is direct. This is proven by the insignificance of the variable of suitability of job options toward worker productivity, whether in the farming or in the processing industry sectors.

V. Conclusion and Suggestions

In this study the researcher was able to prove that the factors of sectoral attractiveness and individual characteristics significantly influences worker productivity, whether in the farming or in the processing industry sectors. However, as an intervening variable, the variable of suitability of job options did not significantly influence worker productivity. Thus, the influence of the factors of sectoral attractiveness and individual characteristics are direct, without going through the variable of the suitability of job options. Looking at and considering the limitations of this study, it appears that the further development of this research is important to be conducted, primarily in relation to occupation sectors which utilize a capital of high technology, in order to obtain a more comprehensive input. Then, for policy makers in the field of labor, it is suggested to be more careful in formulating a policy, especially when it is related to the strategy of increasing productivity, because from the results of this study, there were found four dimensions that shape sectoral attractiveness, which are market, work opportunity, technology, and wages. These four dimensions are statistically significant, and as such these four dimensions must be considered together in implementing a strategy to increase productivity. Thus it is not appropriate to consider wages as the sole source of consideration in supporting that strategy.

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