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THE EFFECTS OF SITUATIONAL FACTORS ON THE CHOICE OF THE MECHANICAL ENGINEERING EXPERTISE PROGRAM IN VOCATIONAL HIGH SCHOOLS

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Abstract

The objective of this study was to determine the effects of the family environment, the previous school environment, the social environment, and the students' attitude on the choice of the mechanical engineering expertise program in Vocational High Schools (VHSs) by the graduates of Junior High Schools. This was a correlational study which was ex post facto in nature. The study population totaled 1095 students. The sample, consisting of 300 students, was selected using the proportional random sampling technique by means of the Krejcie and Morgan formula. The data were collected through inventories, observation sheets, and documents. The content validity was assessed through expert judgment. The construct validity was assessed using the factor analysis and the reliability using the Cronbach's Alpha formula. The data were analyzed using the descriptive analysis, regression analysis, and path analysis at a significance level of 0.05. The results showed that, there were significant effects of the family environment, the previous school environment, the social environment, and attitude in the choice of mechanical engineering expertise program in VHSs by the graduates of Junior High Schools.

Keywords: *the effect of situational factors, the choice of expertise program in VHSs*

INTRODUCTION

Determining the type of education or training that a child needs to follow needs attention, both from the child, from parents and teachers. This is important in order to avoid any inconsistency in choosing educational programs or follow-up exercises. The reasons for the inconsistency in the selection of educational programs or follow-up exercises, among others, consist of: (1) the child is unable to decide one of the alternatives, (2) the uncertainty of not being supported by his interests and talents, and (3) uncertainty about not having confidence (Crites, 1969, p. 25). Choosing a type of education or further training that does not meet the interests will lead to learning activities to be unpleasant, very torturing, stressful and full of compulsion. According to Hurlock (1980, p. 221), students who are less interested in a particular type of education usually show displeasure with the type of education, resulting in low learning achievement, work under ability in any subject they dislike, until the school stops prematurely.

In accordance with the Law Number 20 Year 2003 (Department of National Education, 2003) on National Education System, after graduating, the Junior High Schools students have two alternative options for continuing formal education, namely general secondary education and vocational secondary education. General secondary education is in the form of Senior High Schools and *Madrasah Aliyah* (MA), while vocational secondary education is in the form of Vocational High Schools (VHSs) and *Madrasah Aliyah Kejuruan* (MAK). In accordance with its purposes, Senior High Schools and MA prioritizes preparing students for continuing education at higher education level, whereas VHSs and MAK prioritizes the preparation of students to enter the employment and develop a professional attitude (Department of National Education, 2006)

In terms of the choice to continue their education to VHSs, Junior High Schools students need to get serious attention from various parties so that they appropriately determine the areas of expertise in VHSs. Junior High Schools students need to get information about VHSs comprehensively because the expertise programs offered in VHSs consist of a large spectrum of vocational secondary education skills. It can be grouped into 9 (nine) areas of expertise, 48 expetise programs, and 142 expertise competencies (Ministry of Education and Culture, 2016). According to Finch & Crunkilton (1984, p. 2), vocational education is defined as education that provides the provision to learners to work to sustain their lives. Vocational education is developed from the translation of the concept of vocational education and occupational education, i.e. education aimed at preparing or producing someone to enter the workforce (Calhoun & Finch, 1982, p. 2).

The choice of an expertise program is essentially a process of integration between needs, expectations, individual personal resources, and economic demands (Vroom, 1979). Further, London (1973) suggests that the choice of field of expertise is a blend of interests, abilities, values, opportunities, expectations and limitations in the realities of life. Therefore, it is necessary to provide the students with intensive information from the VHSs related to the selection of expertise programs. Information about the description of VHSs covering the vision, the mission, the objectives of VHSs and the types of areas of expertise held in vocational schools are still very poorly understood by the students of class IX in Junior High Schools (Munadi, 2005). Information on the description of the VHSs is helpful for both teachers and Junior High Schools students in the interaction of teaching and learning activities related to further education programs (Herrick, 1996).

Tiedeman & O' Hara (1963, p. 35) suggests that decision-making is a complicated issue in the stage of one's vocational development. It is further mentioned that there is a relationship between personality and preferred vocational fields. The development of one's personality is essentially a person's mental process as a consequence of his involvement, both in differentiation and togetherness in society. The term identity (ego identity) is used to describe a person's personality in social life. The identity is formed because of the interaction between three factors: the individual's biological condition, individual psychological condition and socio-cultural condition where the individual is located. Therefore, the vocational decisions taken by

the individual always consider the clash between the pattern of life and the structure of vocational development.

According to Isaacson (1977, p. 46), in the selection process of career or field of expertise there are four variables, namely: reality factors, educational process, emotional factors, and personal values. Reality factors involve a person's response to the circumstances surrounding him that force him or herself to make decisions about his career. Educational process relates to the quality and quantity of education that a person acquires that allows the person's insight to determine career choices. Emotional factors are things that concern the aspects of personality. Personal values are aspects of the inherent value of the person that effect career choices.

The selection of areas of expertise is the psychological individual awareness of the objective world in its relation to the self (Morris, 1982, p. 355). It is further mentioned that one's vocational development is essentially an interaction between the behavior, attitude, ambitions and individual values with the surrounding social factors (Super, 1957, p. 56). It means that the selection of a career or field of expertise is the psychological process of a person to determine the right attitude.

A person's attitude will effect the person in addressing the various skills or occupations that exist in society (Holland, 1973, p. 88). This means that everyone will choose a career or a particular job in accordance with their respective attitude. Based on Holland's theory, people will look into themselves (self-understanding) to measure whether or not a career or a job suits them. This means that self-understanding (self knowledge) is one of the important factors that effect the selection of vocational areas. Meanwhile, according to Vroom (1979), a person will choose a particular field of vocation or occupation if he hase the belief and hope that the job or field of expertise he chooses will bring success then he will try his best to get the field of expertise or the job.

The development of the child's age is one of the factors that should be considered in providing guidance to the selection of field work or field of expertise. According to (Thompson, 1973, p. 205), the stage of one's vocational development begins at a very early age with the identification of the work of parents and others in a limited environment, to the retirement age in which one contemplates reflecting the meaning of life through its contribution as a productive human being In the community. It is further mentioned that the introduction to various fields of work or area of expertise at the stage of child growth that is in children aged 13-14 years is very important to do. Thus, children who are already in Junior High Schools should get good guidance from parents in the family environment, teacher guidance in the school environment and also the important role of citizens in relation to selection of types of secondary schools and various types of areas of expertise or the existing work with all its consequences. This is in accordance with the opinion of Gunawan (2010, p. 57), which states that the development of the child's personality is determined by the role of the tri educational center (home education), the school (formal), and the community (non formal). Thus the problems that occur in the selection of skills programs in VHSs by the Junior High Schools graduates, in general can also be grouped into three, namely issues related to parent and teacher guidance, social effect of the community, and issues related to psychological aspects of the students.

Problems related to guidance issues from parents in the family environment and teachers in the school environment are as follows: (1) parents of most students do not have information about various areas of expertise in VHSs, so they are not able to provide maximum guidance (2) the vocational guidance in Junior High Schools especially related to self awareness, world of works exploration, and mature decision making is still poor (3) not all teachers have inserted vocational content in their learning process, and (4) education that provides the basic of employment skills education has not received serious attention in Junior High Schools.

The problems related to the social effect of the community are: (1) the selection of skill areas in VHSs by the Junior High Schools graduates is mostly based solely on the effect of friends or their wishes regardless of the abilities and requirements that must be fulfilled, (2) The poor image of VHSs in society (expensive educational cost, poor prospect of the graduates, limited facilities for practices) will affect the interest of Junior

High Schools students to enter VHSs, (3) the spread of the number of vocational schools and skills programs opened for each area is uneven, thus reducing the opportunity for graduates of Junior High Schools students to be able to choose or enter the program of expertise expected due to geographical factors (distance of residence and transportation conditions), and costs to be borne by parents, and (4) information systems of VHSs has not all been easily accessible in the wider community.

Problems related to the psychology/ individual aspects of the students are: (1) the graduates of junior high schools do not fully aware of the various areas of expertise offered in VHSs, (2) the graduates of junior high schools have no understanding of the world of work related to the areas of expertise offered in VHSs, (3) graduates of Junior High Schools do not yet know the requirements that must be fulfilled both related to cognitive and physical aspects in each skill program available in VHSs, (4) most of Junior High Schools students have not mastered information technology thus they are less able to follow the development of technology in relation to the accuracy in the selection of areas of expertise in VHSs, this is due to the lack of supporting facilities in the form of print and electronic media in most junior high schools, and (5) Junior High Schools do not have a good self-understanding related to the accuracy in the selection of areas of expertise that exist at VHSs.

Considering the wide spectrum of areas of expertise in VHSs, this study is focused on the selection of mechanical engineering expertise program in VHSs. The determinant factors in the selection of mechanical engineering expertise program in VHSs is limited to situational factors that include the family environment, the previous school environment, the social environment, and psychological factors in the form of student attitude toward VHSs.

The objectives of this study were: (1) to describe the family environment, the school environment, the social environment, the students' attitude and the choice of mechanical engineering expertise program at VHSs by the graduates of Junior High Schools in Yogyakarta Special Region, and (2) to analyze the effect of the family environment, the previous school environment, the social environment, and the students' attitude toward the selection of mechanical engineering expertise program in VHSs by the graduates of Junior High Schools students in Yogyakarta Special Region.

METHODS

This study was a correlational study, aims to formulate the factors that effect the selection of mechanical engineering expertise program in VHSs by the graduates of Junior High Schools students in Yogyakarta.

The population of this study consisted of the graduates of Junior High Schools who just entered VHSs (class X) in Mechanical Engineering Expertise Program in Yogyakarta Special Region which amounted to 1095 students. The number of samples was determined by determination of sample size according to Krejcie and Morgan (Issac, 1981, p.192), using a 5% error rate. Based on the calculation, it was obtained the sample size of 285 respondents (rounding). To anticipate the questionnaire and the data that can not be processed, the number of samples was added 5%. Thus the minimum sample used in this study are: 285+ (5% x 285) = 300 respondents (rounding). The sampling technique used was proportional random sampling, which took a group sample calculated based on the total population of each group (school unit).

The data collection technique in this study was a survey by using questionnaires, observation sheets, and documentation. The validity of the instruments in this study included content validity and construct validity. The validity of the contents of the instrument was assessed through expert judgment with the Delphi technique. The construct validity test used confirmatory factor analysis to find out whether the items of the instrument were suitable for estimating the elements contained in the prescribed constructs (Ary, Jacobs, & Razavieh, 1982, pp. 289–291). The calculation of the reliability of research instruments used the Cronbach Alpha (Fernandes, 1984, p. 61). The result of the reliability test of the instrument for the control of information, self-understanding and student attitude were 0.88; 0.79; and 0.91 respectively and the choice of mechanical engineering expertise program was equal to 0,93. This means that research instruments could be used for data collections.

The data analysis techniques in this study included: descriptive analysis and inferential analysis (hypothesis analysis) which cosisted of correlation analysis, regression analysis and path analysis, the previous stage was testing the requirements analysis (normality, linearity, homoscedasticity, and multicollinearity). The relationship between variables in this study is presented in Figure 1.

RESULT AND DISCUSSIONS

The data descriptions in this study consisted of the presentation of the frequency distribution, the central tendencies (mean, mode, median), the spread (standard deviation), and the descriptive interpretation of the family environment variable (X1), the previous school environment (X2), the social environment (X3), students' attitude (X4), and the choice of mechanical engineering expertise program at VHSs (Y). The results of the data analysis is presented in Table 1.

Based on the results of descriptive data analysis, it could be seen that the average empirical score (M)> average score criteria (Mi). Based on Table 1, it can also be seen that the achievement score for all research variables are above 70%. Thus it can be concluded that all variables in this study were generally included in the high category.

Interrelated Correlation of the Variables

The correlation or relationship between each variable can be identified by testing the hypothesis: There is a significant relationship between each variable, namely: family environment (X1), previous school environment (X2), social environment (X3) the students attitude (X4), and the choice of mechanical engineering expertise program in VHSs (Y). To test this hypothesis, it was used nil correlation analysis between each variable with product moment from Pearson. The results of correlation analysis between each variable are presented in Table 2. The proposed hypothesis states that there is a positive and significant relationship between each research variable. It is tested and accepted at the level significance of 0.05. A summary of correlation analysis results between each variable is presented in Table 2.

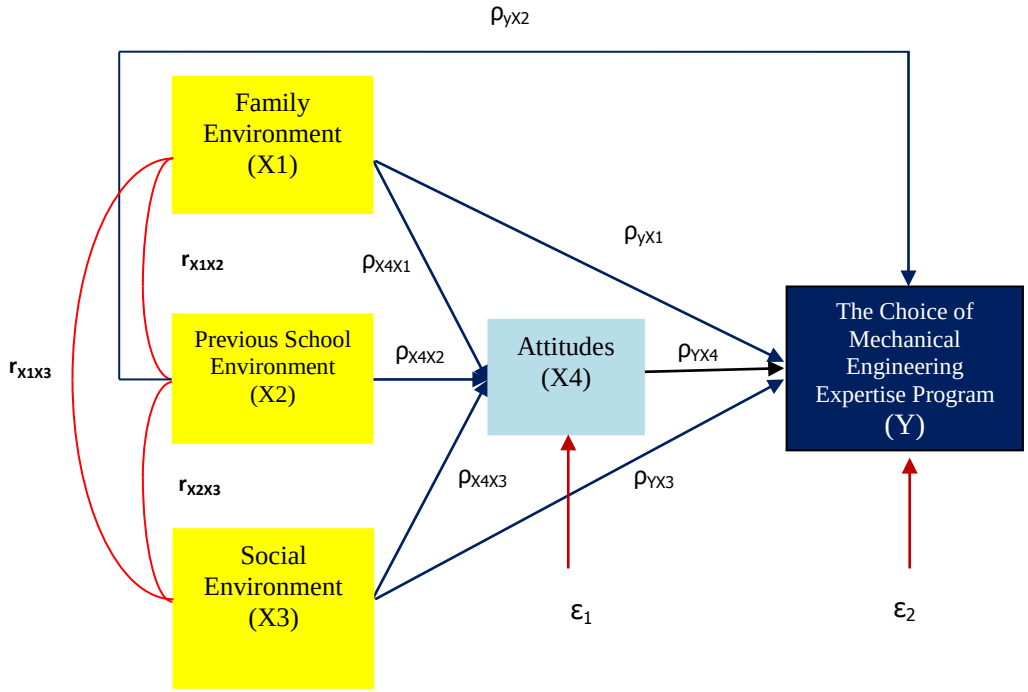

Figure 1. The Relationship between Variable

Table 1. The Result of the Research Data Analysis

Var.	SD.	Mi	M	Me	Mo	M : Mi	Score (%)	Category
X1	7,40	66	80,24	80,00	80,00	higher	73,9	High
X2	8,29	63	77,79	77,00	76,00	higher	74,1	High
X3	6,29	39	45,05	46,00	46,00	higher	69,3	High
X4	7,16	54	75,29	75,00	72,00	higher	83,6	High
Y	6,92	51	69,22	69,00	70,00	higher	81,0	High

Table 2. The Correlation Analysis Results between Each Research Variable

		X1	X2	X3	X4	Y
X1	Pearson Correlation	1	0,292	0,253	0,231	0,274
	Sig.		0,000	0,000	0,000	0,000
X2	Pearson Correlation	0,292	1	0,455	0,401	0,372
	Sig.	0,000		0,000	0,000	0,000
X3	Pearson Correlation	0,253	0,455	1	0,448	0,545
	Sig.	0,000	0,000		0,000	0,000
X4	Pearson Correlation	0,231	0,401	0,448	1	0,651
	Sig.	0,000	0,000	0,000		0,000
Y	Pearson Correlation	0,274	0,372	0,545	0,651	1
	Sig.	0,000	0,000	0,000	0,000	

Table 3. The Multiple Regression Analysis Results of the Variables of X_4, toward the Variable of X_1, X_2 and X_3

Dependent Var.	Independent Var.	B	Beta	r_{par}	Det. Parsial (r^2_{par})	t_{hitung}	Sig. t	Summary
X_4	X_1	0,140	0,107	0,144	0.021	2,499	0,013	R = 0,717
	X_2	0,501	0,430	0,473	0.224	9,237	0,000	R^2= 0,513
								F = 103,988
	X_3	0,528	0,360	0,414	0.171	7,827	0,000	P < 0,05
								C = 21,556

Table 4. The Results of Multiple Regression Analysis of the Variable of Y_4, toward the Variables of X_1, X_2, X_3, dan X_4

Independent Var.	Dependent Var.	B	Beta	r_{par}	Det. Parsial (r^2_{par})	T_{count}	Sig. t	Summary
X_4	X_1	0.038	0,035	0.091	0.008	0,991	0,072	R = 0,733
	X_2	0,022	0,020	0.082	0.007	0,967	0,083	R^2= 0,538
	X_3	0,239	0,228	0.250	0.063	4,420	0,000	F = 56,816
	X_4	0,366	0,378	0.371	0.138	6,844	0,000	P < 0,05
								C = 12,199

The Effect of the Family Environment (X1), the Previous School Environment (X2), and the Social Environment (X3) on Students' Attitude at VHSs (X4) (Determination of Students' Attitude in VHSs)

The effect of the family environment, the previous school environment and the social environment on the students' attitude can be determined by examining the following hypothesis: There is a significant effect of the family environment (X1), the previous school environment (X2), and the social environment of (X3) the students' attitude (X4). To test this hypothesis, it was used multiple regression analysis by placing X4 as dependent variable and X1, X2 and X3 as independent variable.

The summary of the analysis results is presented in Table 3.

The result of multiple regression analysis in Table 3 shows that Fcount = 103,988; At p <0.05; Then the correlation value (R) = 0.717 is significant at the significance level of 0.05. Based on the results of the analysis, the hypothesis states: There is significant effect of family environment (X1), the previous school environment (X2), and social environment of society (X3) on student attitude (X4): accepted. The coefficient of determination (R2) = 0.513 indicates that the contribution of these three variables is 51.3%.

The parent environment (X1) has a significant effect on students 'attitude (β = 0,107: p> 0,05), the school environment (X2) has significant effect on students' attitude (β = 0,430: p> 0,05), and social environment (X3) have significant effect to the students' attitude (β = 0,360: p> 0,05).

Based on the partial determination coefficient, the previous school environment has the greatest contribution to the students' attitude (22.4%), followed by the social environment (17.1%), and the family environment (2.1%). Thus it means that the school environment has a more dominant effect in determining the students' attitude.

The Effect of the Family Environment (X1), the School Environment (X2), the Social Environment (X3), and the Students' Attitude (X4), on the Choice of Mechanical Engineering Expertise Program in VHSs (Y) (Determination of Choice of Mechanical Engineering Expertise Program in VHSs)

The effect of the parents' environment, school environment, the socio-cultural environment, and the students' attitude on the choice of mechanical engineering expertise program in VHSs is identified by testing the following hypothesis: There is significant effect of the family environment (X1), the school environment (X2), and the social environment (X3), and students' attitude (X4) on the choice of mechanical engineering expertise program in VHSs (Y). To test this hypothesis it was used multiple regression analysis by placing Y as the dependent variable and X1, X2, X3, and X4 as independent variables. The results of multiple regression analysis are presented in Table 4.

Based on the result of multiple regression analysis in Table 4, it shows that Fcount = 56,815; and p <0.05; Then the correlation value (R) = 0.538 is significant at the 0.05 significance level. Based on the results of the analysis, the hypothesis states: There are significant effects of the family environment (X1), the previous school environment (X2), the social environment of society (X3), and students' attitude (X4) on the choice of mechanical engineering expertise program in VHSs (Y): accepted. The coefficient of determination (R2) = 0.538 indicates that the contribution of these four variables is 53.8%.

Separately, the family environment (X1) has an insignificant effect on the choice of the mechanical engineering expertise program in VHSs (β = 0.035: p> 0,05), the pre-vious school environment (X2) has an insignificant effect on the choice of mechanical engineering expertise program in vocational schools (β = 0,022: p> 0,05), the social environment (X3) has significant effect on the choice of mechanical engineering expertise program in VHSs (β = 0,228: p <0,05), and student attitude at VHSs (X6) has a significant effect on the selection of mechanical engineering skills programs in VHSS (β = 0.378: p <0.05)

Based on the partial determination coefficient, students' attitude have the greatest contribution to the selection of mechanical engineering expertise in VHSs (13.8%), followed by sequence of social environment (6.3%), family environment (0.8%), and previous school environment (0.7%). Thus the attitude of students has a more dominant effect in determining the choice of mechanical engineering expertise program in VHSs. Based on the predictor values and constant of double regression result, regression equation can be arranged as follows: Y = 12,199 + 0,038 X1 + 0,022 X2 + 0,239X3 + 0,366X4 .

The result of equation of regression line shows that average score of program skill selection (0,022), (0,239), and (0,366) for increase/decrease of family environment score, previous school environment, social environment, information control, self-understanding, and student attitude on vocational schools for one unit. An empirical causal relationship model containing regression weight (β) or path coefficient is presented in Figure 2.

Path Analysis (Direct and Indirect Effect)

The direct and indirect effects was tested using the significance of the path coefficient based on the empirical causal relationship model. The coefficient value of the lane below 0.05 is not significant and is excluded from the empirical causal relationship model. The amount of direct effect can be known from the beta coefficient of the results of two regression analysis using stepwise method that are: (1) multiple regression of X4 variable over variables X1, X2, and X3, and (2) multiple regression of variable Y over variables X1, X2, X3, and X4. While the indirect effect was calculated manually based on the magnitude of the direct path coefficient according to the causal relationship model. The summary of the calculation of direct effect, indirect effect, non-causal effect of the causal relationship model can be seen in Table 5.

Based on the calculation of the direct and indirect effects it can be concluded that:

a. The direct effect of the family environment on the choice of mechanical engineering expertise program in VHSs is not significant.
b. The indirect effect of the family environment on the choice of mechanical engineering expertise program in VHSs through student attitude is not significant.
c. The direct effect of the school environment on the choice of mechanical engineering expertise program in VHSs is not significant.

Table 5. The Result of Path Analysis

Dependent Variabel	Independent Variabel	Direct Effect	Indirect Effect X_4	Total Effect	Non-causal effect	Correlation
X4	X_1	0,107	-	0,107	0.124	0,231
	X_2	0,430	-	0,430	0.206	0,401
	X_3	0,360	-	0,360	0.088	0,448
Y	X_1	0,035	0,051	0,086	0,188	0,274
	X_2	0,020	0,162	0,162	0,190	0,372
	X_3	0,228	0,136	0,364	0,136	0,545
	X_4	0,378	-	0,378	0.273	0,651

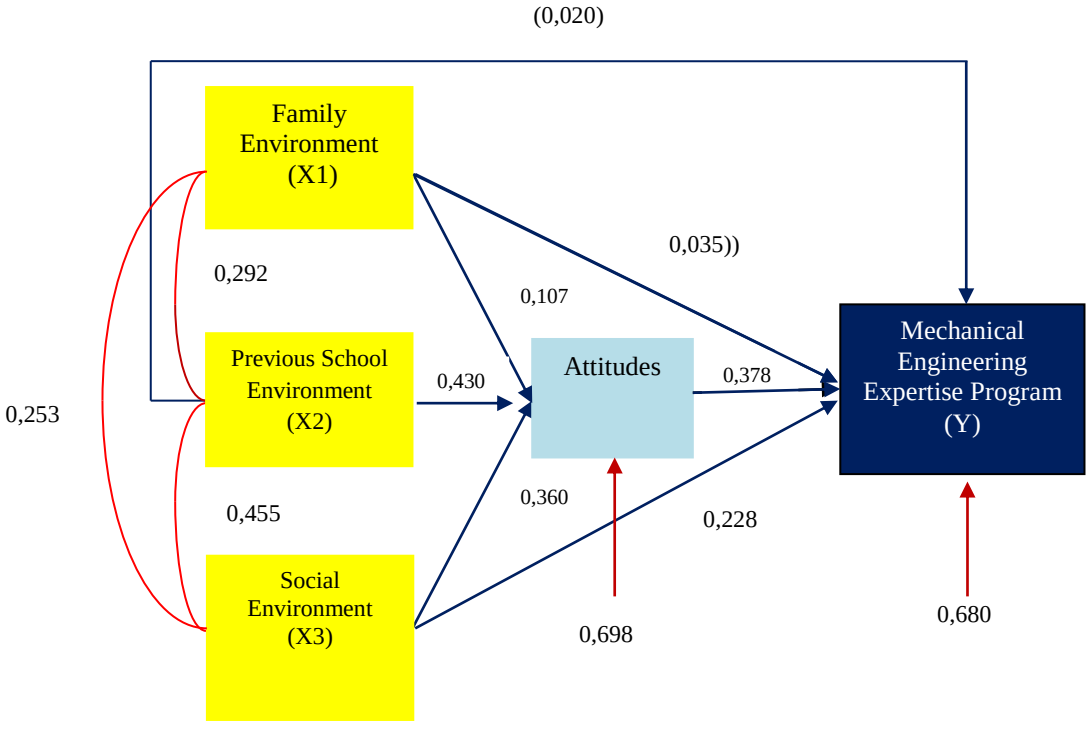

Figure 2. The Model of Empirical Causal Relationships

d. The indirect effect of the school environment on the choice of mechanical engineering expertise program in vocational schools through student attitude is significant.
e. The direct effect of the social environment on the choice of mechanical engineering expertise program in VHSs is significant.
f. The indirect effect of the social environment on the choice of mechanical engineering expertise program in vocational schools through t student attitude is significant
g. The direct effect of students' attitude on the choice of mechanical engineering skills program at VHSS is Significant.

Discussion

Based on the results of correlation analysis between research variables, it can be seen that the relationship between variables are included in the strong criteria. The smallest correlation number found in the relationship between the mastery of information with students' attitude (r = 0.448). While the largest number of correlations found in the relationship between students' attitude with the choice of mechanical engineering expertise program in VHSs (r = 0.651). The existence of a strong correlation between students 'attitude with the selection of mechanical engineering skills in VHSs, indicates that students' attitude have a strong effect on the choice of mechanical engineering expertise program in VHSs. This is consistent with the results of Brauchle's (2002) and Zirkle (2005) study, which found that there is a positive relationship between attitude and motivation with success in selecting areas of expertise. Therefore, the students' attitude towards VHSs need to be maintained and improved again by improving the quality of process, out-put and out-come in VHSs, so that the image of VHSs in society will be improved.

The result of hypothesis testing stated that there is significant effect of the family environment, the previous school environment, and the social environment on students' attitude at VHSs. The results of this hypothesis test show that the family environment, the school environment, and social environment have a significant effect on the attitude of students in vocational schools. While individually, the family environment, the previous school environment, and the social environment of society have a significant effect on students' attitude at VHSs. It shows that together the family environment, the previous school environment, and the social environment have a significant effect on the attitude of students in VHSs. Thus, the high level of student attitude toward VHSs will be effected by high quality of family environment, the previous school environment, and the social environment of students. The results of this study are in accordance with the opinion that the family environment is the smallest environment inhabited by each individual and has an important role in the process of child development (Sumitro, 1998, p. 80; Yusuf, 2001, p. 75; Mifflen & Mifflen, 1986, p. 65). The results of this analysis are also consistent with the opinion that parents are the main element in the family environment that has responsibility for the fulfillment of physical aspects (facilities) and psychic (attention and guidance) to the child (Hamalik, 1995).

The result of hypothesis test stated that there is significant effect of the family environment, the previous school environment, the social environment, and attitude of students at VHSs to select the mechanical engineering expertise program at VHSs. The result of this hypothesis test shows that the family environment, the previous school environment, the social environment, and the students' attitude in the vocational schools have a significant effect on the selection of the field of mechanical engineering expertise program in VHSs. While individually the family environment, the previous school environment, the social environment, and the attitude of students at VHSs have significant effect on the choice of field of mechanical engineering expertise program at VHSs. But the school environment does not have significant effect. It shows that the high level of accuracy of students in the selection of mechanical engineering expertise program in VHSs will be effected by the high quality of the family environment, the social environment, and the attitude of students in VHSs.

There is significant effect of the family environment on the choice of areas of expertise in VHSs. This is in line with the study of Kush & Cochran (1993), who found

that with the guidance and direction of parents the children have a positive insight on the selection of areas of expertise or work. The results of this study are also in harmony with study of Ryan, Solberg, & Brown (1996), which states that the quality of relationships or interactions with parents and the degree of family functions affects about 14% of the variation of career determination. A good family environ-ment will be reflected in the quality aspects of the socioeconomic status of the parents and the psychological aspects of the parents. Socioeconomic aspects include the level of education, occupation, income and facilities they have, while the psychological aspects of family climate, attention, and provision of parental guidance to children. With good quality of socioeconomic status of parents, good facilities will also be available which in turn with the availability of various facilities will provide greater opportunities for children to have good information mastery. Similarly, the creation of a safe, comfortable and peace-ful environment in the family environment and high attention and guidance of parents to children will provide better opportunities for children in the mastery of information, especially related to further education and issues of the world of work. The significant effect of the previous environments on the choice of areas of expertise in VHSs, the findings of this study are in line with study of Holland (1973), which found that with the guidance and direction of teachers in schools, the children have positive insights on the selection of areas of expertise or work. Furthermore, it is also mentioned that vocational guidance is very helpful for individuals to gain knowledge about: (1) Self awareness, (2) world of work exploration, and (3) mature decision making. A good school environment will be reflected in the quality of the teacher' services aspects of the teaching and learning process, student participation in academic and non-academic activities, school culture and vocational guidance provided by the teacher to students especially those related to vocational election in VHSs. A school is the second environment after the family where the individual interacts with the teacher and other students who have different social and personality characteristics. With the mutual interaction between fellow citizens of the school, will certainly affect the increase in insight of students, which in turn will certainly increase the mastery of information to students. This is in accordance with opinion, Djohar (2003, p. 4), that every child in school is always together and interacts with other children and also together with his teacher by bringing their own culture, so that the students will have new wider insights. Further, according to Sukamto (1988, p. 21), schools have five main functions: (1) cultural transmission, (2) transmission of skills, (3) transmission of values and beliefs, (4) preparation for productive life and (5) as a place of group interaction. Thus it means that social interaction with friends and teachers in school has given a little increase in the mastery of various information that affect the development of students' mental behavior. With the mastery of information will affect students in responding to various aspects around it including the choice of areas of expertise in the community. Theoretically, these impacts will also affect students in responding to the choice of areas of expertise when they are asked to assess and select alternative skills or work.

The result of path analysis shows that the direct effect of the family environment on the selection of the field of mechanical engineering expertise in VHSs is not significant, but the indirect effect through student attitude is significant. The result of path analysis shows that the attitude of the students is less meaningful in explaining the effect of the family environment on the selection of the areas of expertise in VHSs. This result is consistent with the results of studies which state that the mastery of information of Junior High Schools graduates about VHSs is still very less, so it will result in wrong perception and attitude for VHSs Which in turn will greatly affect the accuracy in determining the area of expertise in VHSs (Ahmad, 2007; Hurlock (1980, p. 66). The results of the analysis also indicate that the family environment can not directly affect in the selection of field of mechanical engineering expertise program in VHSs without basing on the attitude of students to VHSs.

The result of path analysis shows that the direct effect of the school environment on the selection of areas of expertise in VHSs is not significant. But the indirect effect through student attitude is significant. This indicates that students' attitude have meaning in

explaining the effect of the previous school environment on the choice of areas of expertise in VHSs. Better quality of the school environment will result in better students' attitude toward VHSs which ultimately determine the better or more appropriate in the selection of areas of expertise in VHSs. The results of this analysis are consistent with the opinion that schools with qualified teachers are capable of bringing students with varying abilities to achieve good academic performance, information mastery, and cultivate high expectations and attitude in the selection of areas of expertise or employment in the future (Andersen, Spielman, & Bargh, 1992).

The direct effect of the social environment of the community on the selection of areas of expertise in VHSs is significant, and indirect effect through student attitude is significant. This means that the social environment has a very important role in the choice of mechanical engineering expertise program in VHSs. Besides, the results of path analysis also shows that students' attitude have a meaning in explaining the effect of the social environment of society on the selection of areas of expertise in VHSs. A high quality social environment will lead to better understanding of self and student attitude on VHSs which ultimately determine the better or more appropriate students in the selection of areas of expertise in VHSs. The findings are consistent with the opinion that the social environment of society is very influential on the formation of attitude and patterns of behavior in a person (Maliki, 2010; Tiedeman & O' Hara, 1963). The limitation of this study is that this study only focuses on one of the areas of expertise in VHSs namely the field of mechanical engineering expertise. Therefore, to get more comprehensive research results then this study needs to be extended again in other areas of expertise in VHSs.

CONCLUSION

Base on the finding and dicussion, it can be concluded that:

First, there is a positive and significant effect of the family environment, the previous school environment, the social environment, and the students' attitude on the selection of the engineering expertise program in VHSs. The amount of contribution from four variables is 53,8%. Based on the partial determination coefficient, the students' attitude have the greatest contribution to the selection of mechanical engineering expertise in VHSs (13.8%), followed by the social environment (6.3%), the previous school environment (0.7%) and the family environment (0.8%). Thus the attitude of students has a more dominant effect in determining the selection of field of mechanical engineering expertise program at VHSs.

Second, based on the results of path analysis it can be explained that:

a. The direct effect of the social environment and the students' attitude on the choice of mechanical engineering expertise programs in VHSs is significant.
b. The direct effect of the family environment and the school environment on the choice of mechanical engineering expertise programs in VHSs is not significant.
c. The indirect effect of the school environment and the social environment on the choice of mechanical engineering expertise programs in vocational schools through student attitude is significant.
d. The indirect effect of parents' environment on the choice of mechanical engineering expertise programs in vocational schools through student attitude is significant.

Suggestion

The family environment, the previous school environment, the social environment, and the students' attitude have important roles in determining the choice of mechanical engineering expertise programs in VHSs for Junior High School graduates. Therefore, Junior High Schools students should always be encouraged to be able to increase their capacity by providing various access to information media and providing more intensive vocational guidance.

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