

## Strategy Interest of Dual System Vocational Education Training and Development to Prepare Competence-Based Human Resources

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### ABSTRACT

Preparatory programs for the textile and textile product industry workforce are carried out through vocational education and training as well as competency certification, especially in areas becoming centers of growth and distribution of the textile and textile products industry. This research focuses primarily on the influence of strategic interests in the training and development of textile and garment industry companies in the development of community college programs; the influence of human resource competence on the development of higher education programs; and the influence of the role of the government in the development of higher education programs. The sampling technique used in this study was Saturated Sampling where the number of research samples was 320 respondents. Data processing and analysis techniques in this study use Partial Least Square (PLS) approach using PLS-SEM 3.0 software. The findings in this study indicate that First, the importance of strategic training and company development in the textile and garment industry has a positive and significant influence on the development of higher education programs. Second, human resource competence has a positive and significant impact on the development of community college programs. Third, the role of the government in preparing human resources has a positive and significant influence on the development of higher education programs.

**Keywords**—Vocational Dual System Education, Training and Development, Competence, Human Resources, Textile Industry.

### INTRODUCTION

Manpower needs in the textile and textile products (TPT) industries are very high, or 22.5% of all industrial sectors. The Indonesian government is preparing a number of programs to fill it. Minister of Industry of the Republic of Indonesia Airlangga Hartarto said that based on the projected growth of TPT in the future, the absorption of industrial workers in the textile sector is estimated to reach 135,000 people per year or 22.5% of the total labor in the industrial

sector needs for about 600,000 people per year. The need for labor is spread in several provinces in accordance with the distribution of the textile industry, especially in the regions of West Java Province (39.39%), Central Java (23.46%), DKI Jakarta (13.5%), and East Java (12, 9%). %).

The target of developing industrial workforce is an increase in the absorption of industrial labor on average by 3.2 percent per year during the 2015-2035 period with a composition of managerial workforce 12% (twelve percent) and technical workforce 88% (eighty eight). percent). To realize competency-based industrial workforce, the target to be achieved is the establishment of competency infrastructure including the availability of Indonesian National Work Competency Standards (SKKNI) in the industrial sector, the availability of competency assessors and licensing assessors, the establishment of Institutional Professional Certification (LSP) and Assessment Center (TUK), as well as the establishment of community education institutions or academies in competency-based industry in accordance with industrial estates developed by the Association and companies.

Human resources (HR) industry development activities are focused on industrial workforce development plans. The development of industrial workforce aims to prepare competent Industrial workers who are ready to work based on the needs of industrial companies and / or industrial estate companies, increase the productivity of Industrial workers, increase employment in the Industrial sector and provide protection and welfare for industrial workers. The TPT industry workforce preparation program is carried out through vocational education and training and competency certification, especially in areas becoming centers of growth and dissemination of the textile industry. In recent years, the textile industry has grown and developed in the province of Central Java, both new investments, plant expansion and relocation. The Academy of Solo TPT Industry Community is a pilot project for the development of vocational education that adopts the concept of dual system education from Germany, education oriented to mastering work skills by integrating education on campus and industry so that graduates are truly ready to work in the industrial world. It is for this reason that the Ministry of Industry established the Academy of TPT Industry Communities in Solo aiming to supply the workforce needs of the Diploma II level for Solo and surrounding areas.

The Ministry of Industry, launched a vocational industry program to build relationships and compatibility between the Industrial School and the Vocational School (SMK), with a target of 500 industrial companies that will foster 1,995 SMK. Through this program, every industrial company is asked to develop at least five vocational schools so that by 2019 it is expected that 845,000 graduates of competent and certified vocational schools will be produced according to industry needs. Thus the existence of the Academy of Communities in the Textile and Textile Industry of Surakarta in Central Java Province, especially in Surakarta, as part of the development of a dual system-based vocational education program is the right step, to support the government policy of the Republic of Indonesia.

Community College is an academic College of the vocational level that contributes to improve and prepare people to enter the industry and prepare for the needs of workers trained to operate the machine (operator) in the area of industry compliance with the scope of work done [1; 2; 3]. This dual system vocational education will provide life skills that are part of education; (1) provide skills so that someone can live independently, (2) provide day-to-day skills, education, (3) providing personal skills and (4) life skill to work [4; 5].

The development and development of the textile industry in Indonesia continues. At present, TPT is one of the leading commodities exported from industrial product exports. For this

reason, to support the growth of the textile industry, qualified human resources are needed. To meet the needs of human resources, the textile industry sector is carried out by conducting of dual system vocational education, the strategic role of structured training and development in the textile industry sector, to prepare competent HR services [6]. This article was developed on the basis of research findings where the main focus was: (1) the strategic importance of training and development of textile and garment industry companies towards the development of community college programs; (2) Competence of human resources towards the development of higher education programs; and (3) The role of the government in developing community college programs.

## REVIEW OF THE LITERATURE

### **The Importance of Strategic Training and Development Industrial Corporation**

Improving worker competency is one of the way in which training and development can create competitive advantage, but this is not the only way, identifying success factors that can be developed in the training and development sector according to Chamadia & Shahid [7] stating that a strong coalition between all stakeholders including the government, private sector, and employers' federations. Training and development activities also contribute to the company's success indirectly. Training and development can provide shared experiences that enhance understanding among employees who have different backgrounds, and help accelerate the development of company cohesion and employee commitment [8; 9].

Training and development activities are also a way for companies to meet the needs of their employees. By providing opportunities for training and development, the company helps employees to develop their competitive advantage and ensure the security of their work for the long term [10]. In a highly competitive industry, training to improve fast performance is very important for companies having decreased levels of productivity or customer satisfaction. Training to improve performance is also important for companies using new technology quickly in order to increase employee negligence. The reason is that everyone must continue to learn and develop to support companies that also develop and change along with technological development [11].

New technology is expected to increase the level of productivity achieved in recent years. But new technology can rarely be introduced without training in its use. The diversity of new technological elements that will be developed, the unique nature of different training programs and the difficulty in assessing soft skills are some of the challenges that must be faced by training centers in a training and competency development [12]. The training program consists of various sessions where schedules can be arranged easily during weekdays. Employees are allowed to attend many training sessions because they need to develop their mastery. In addition to technical training, employees are taught about the long-term benefits that will be realized when they can use new technology.

Mastery of the latest technology, in addition to assisting in work that requires competence but also training them independently so that they have other skills such as technopreneurship where they run businesses according to the industry, by optimizing the use of technology to innovate new products and services [13, 14, 15]. Discussion about the pressures that accompany major changes are also included, employees will go through the program quickly, and there are almost no complaints from customers [16, 17].

Many models are used for the development of knowledge, attitudes and skills related to work but according to Lillevali and Taks [18], those which provides adequate training facilities and effective training and development of skills recommended for certain jobs [19, 20]. Training

can help employees understand customer needs while creating a customer-oriented culture. Therefore, customer training can help meet their needs. Further training activities go beyond organizational boundaries. In addition to training its workers, many companies help train their customers and develop their workers. Employees enter the world of their clients, learn their backgrounds and languages, and the latest news to better connect with customers and develop their knowledge [21, 22].

### **The Competence of Human Resources**

Competence is the key factor for someone, community, society and organization to produce excellent performance. Human resource competencies include changes in behavior and work skills that affect competency standards, skill standards, industrial relations, work experience [23, 36]. Further in collective situations, competence is a key factor in determining the success of an organization. Competence involves the authority of each individual, community or society to carry out tasks or make decisions in accordance with their role in the organization that is relevant to the expertise, knowledge and abilities possessed.

Competencies possessed by a person must be able to support the implementation of organizational strategies and support changes made by management. Berger and Berger (2008) stated that competence is a characteristic (combination of several characteristics) that can be measured reliably and is able to survive relatively long (stable) owned by a person, group, community or organization that can predict statistically the criteria (size) of performance level [24]. A person's ability to work in the industry is seen from the ability of these workers to meet industry expectations that require employee skills, but in reality, the academic vocational education will provide a person's ability to be able or not to meet industry expectations. Therefore vocational education must make changes in curriculum to adopt industrial needs in order to meet the needs needed by industry so that students (prospective workers) are prepared with the ability, knowledge and skills to work [25]. Discussing about competencies there are five characteristics that make up competencies; character, motives, self-concept, knowledge and skills. Characteristics of knowledge and skills tend to be seen because they are on the surface, while three character competencies, motives and self-concepts are more hidden and relatively difficult to develop, even though they act as sources of personality [26, 27].

Companies always develop the potential of employees who have competencies. The competency characteristics of the employees concerned are having knowledge, abilities, initiatives and innovative attitudes in various dimensions of work, are as follows: (a) Skills and attitudes in solving problems oriented to efficiency, productivity, quality, and concern for environmental impacts; (b) Skills and attitudes in communicating horizontally and vertically and building internal networks; (c) Skills and attitudes in controlling emotional self, building friendship, and objectivity of perception; (d) Attitudes in continuing to learn; (e) Skills and attitudes in self-development to link job competencies with individual personal competencies; (f) Develop skills and attitudes to find new ways to optimize quality services to customers; and (g) skills and attitudes to strengthen each other (synergy) among employees to always improve product quality and service quality to customers.

### **The Education of Students in the Dual System on the Community College Textile and Product Textile Industry**

Community College (CC) are educational institutions that are expected to be able to improve human resources to utilize and develop local abilities. Community college is formal education at the college level, but has differences with other types of vocational colleges such as polytechnics and academies. Polytechnic is higher education that organizes vocational

education in various groups of science and / or technology and if it meets the requirements, polytechnics can organize professional education [28].

It is very important for community colleges to develop sustainable training programs as a way to increase awareness of all parties to take the initiative to try to instill the concept of sustainability in teaching and learning activities both in the formal and informal curriculum [29, 30]. The most important component in the process of college learning is how the learning process is able to provide causal analogies, modeling, reasoning and solutions [31]. The development of this strategy will help students complete this skill level in the context of students in Community Colleges [32].

In essence, the objectives of CC include: 1) improving competencies that are in line with regional and industrial regional needs; 2) expanding access to higher education; 3) encouraging the growth of small and medium enterprises (SMEs) in regions in accordance with regional potential. To realize the objective of establishing CC, the curriculum is prepared based on: 1) competency standards in accordance with the Indonesian National Qualification Framework (KKNI); 2) learning methods are designed with more to emphasis on work skills with a composition of 60-70% industrial practice and work and 30-40% theory; and 3) CC graduates are expected to obtain competencies in accordance with the work needs in the area, or can continue to higher education in accordance with industrial / independent needs. The target of CC students is secondary education graduates either have worked or not (Law of the Republic of Indonesia Number 12 of 2012 Concerning Higher Education).

In 2012, Government launched a tertiary level diploma one (D1) and diploma two (D2) program called Community College (CC) through the Ministry of Education and Culture. The formation of CC is the mandate stated in the Law of the Republic of Indonesia Number 12 of 2012 concerning Higher Education. Article 59 paragraph 7 states that "Community Academy is a university that organizes vocational education at the diploma level one and / or diploma two in one or several specific branches of science and / or technology based on local excellence or to meet special needs".

### RESEARCH METHODS

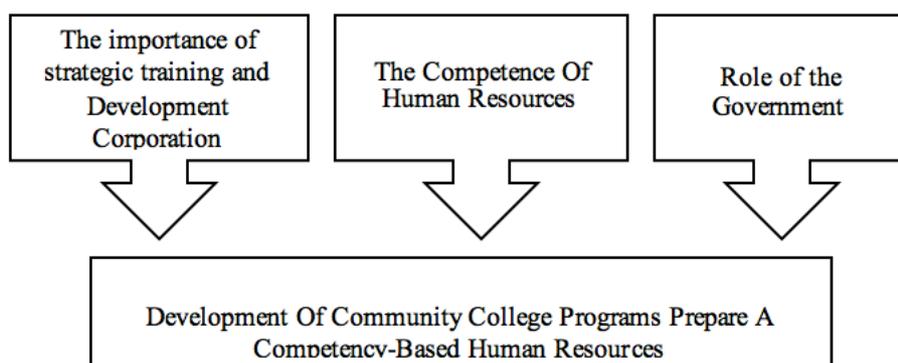
This type of research is a model combination research or sequential explanatory research design. Sequential explanatory research design is a combination research method that combines quantitative and qualitative research methods in sequence, where the first stage of the research is conducted by using quantitative methods and in the second stage is conducted by using qualitative methods.

The population in this study were all people in the textile and garment industry in Central Java recruited by companies as company employees with agreements; where the company has collaborated with AK-Textile Surakarta, and was declared to have passed the entrance selection test, registered as a student of the Academy of Textiles and Textile Products of the Surakarta Diploma-II Community. The population of this study is 320 people from various regions in Central Java.

Sampling can be defined as the process of selecting a number of element units or subjects from and representing the population called samples to be studied where generalizations or conclusions can be made about the characteristics of the population being represented. The sampling technique used in this study is Saturated Sampling, which is a sampling method by including all members of the population as research samples. Based on the above opinion to

meet the minimum requirements (minimum requirements), the number of research samples used in this study were 320 respondents.

Data processing and analysis techniques in this study uses Partial Least Square (PLS) approach using PLS-SEM 3.0 software. With the PLS technique, it is assumed that all variance sizes are useful to explain. The PLS technique uses an iteration algorithm consisting of serial PLS which is considered as an alternative model of Covariance Based SEM (CB-SEM). The PLS-SEM approach is based on a shift in analysis from the measurement of model parameter estimates to the measurement of the relevant model predictions.



**Figure 1: The framework of thought**

## RESULTS

### Strategic Interest of Corporate Training and Development

The overall average calculation result from strategic training and company development indicators is 4.36, while the average score per indicator for the strategic importance variables of training and company development shown in Table 1 shows that the highest mean is the employee retention indicator 4,46 and lowest on indicators increasing recruitment by 4.22.

**Table 1: Description of the respondent's Answers strategic interests Corporate training and development**

Variable	Indicator	The mean Score of respondents answer
The importance of strategic training and Development Corporation	1) increase recruitment	4,22
	2) Retention of employees	4,46
	3) Improve the competitiveness	4,36
	4) Using new technology	4,30
	5) Improve customer service	4,44
	6) Ethics training	4,38
Mean Strategic Interests		4,36

Based on the highest average value of 4.46, stating that employee retention in the interests of the company is a good and very strategic thing, employees who take part in educational programs at AK-Tekstil Surakarta are expected to have better performance, improve efficiency, effectiveness or quality. higher in completing the task assigned to him.

The lowest value is 4.22, stating that it increases employee recruitment for the company's interests to achieve its objectives so that the productivity of the company runs smoothly because one of the company's strategic interests requires workers or employees in accordance

with the principle "the right man in the right place", First step which is the main key is the recruitment and selection process to recruit workers according to the needs of the company.

### The Competence of Human Resources

The results of the calculation of the average value of the overall human resource competency indicator is 4.24, while the average score of respondents per indicator for the human resource competency variables shown in Table 2 shows that the highest average value is the personality indicator to implement positive behavior individually at 4.40 and the lowest in the indicator has knowledge of how the implementation of the work is 4.12.

**Table 2 : Description of the respondent's answer to the competence of human resources**

Variable	Indicator	The mean Score of respondents answer
The Competence Of Human Resources	1) The skills of a job well done	4,15
	2) Have knowledge on the way of implementation of the work	4,12
	3) Social roles have positive relationships with others	4,18
	4) Self-image for upholding the value of humanity in carrying out tasks based on religious, moral and ethical	4,39
	5) Trait (personality) to implement positive behavior individually	4,40
	6) The motive was able to finish the task by independent oversight tanpa	4,21
The Mean HR Competencies		4,24

Based on the highest average score of 4.40, stating that personality is to implement positive behavior individually as human resource competencies that must be possessed by CC-Textile Surakarta program participants, with this good personality competence, human resources are seen as individuals with The uniqueness to be developed, so that with this tendency the role of human resources will be increasingly appreciated, especially in terms of human resource competence.

Based on the lowest average score of 4.12, stating that having knowledge about how to carry out the work would be good for AK-Tekstil Surakarta program participants in improving human resource competencies, because knowledge is the result of knowing through sensing certain objects and very important towards the formation of action someone gets experience that will later provide a certain level of knowledge and ability in carrying out work.

### Government's Role Setting Up Human Resources Industry

The results of the calculation of the average value of the overall indicator of the role of the government in preparing industrial human resources is 4.32, while the average score of respondents per indicator for government role variables shown in Table 3 shows that the highest average value is an indicator of the provision of facilities and infrastructure with integrated laboratories is 4.40 and the lowest is an indicator to provide facilities and infrastructure with factory units teaching is 4.18.

**Table 3: Description of the respondent's answer to the role of Government**

Variable	Indicator	The mean Score of respondents answer
Government's role in preparing human resources for Industry	1) Build infrastructure competency-based institution with a Certifying Propesi (LSP)	4,26
	2) Building the infrastructure of the institution-based kompetensi in the presence of a place Test of competence (TUK)	4,30
	3) Building a competency-based workforce through education	4,39
	4) Building a competency-based workforce through training	4,39
	5) Building a workforce based on competence through apprenticeship	4,26
	6) provide infrastructure and facilities with the integrated laboratory	4,40
	7) provide infrastructure and facilities with the workshop	4,38
	8) Provide infrastructure and facilities with the Teaching unit Factory	4,18
	9) Placement of graduate education programs, training and pemagangan in the company	4,30
Mean The Role Of Government		4,32

Based on the highest average value of 4.40, stating that the provision of facilities and infrastructure with integrated laboratories is the role of the government in preparing industrial human resources, the laboratory as a place to practice developing intellectual skills through activities such as observation, recording and training. motor skills of the Surakarta AK-Tekstil program. Providing of good laboratory facilities and infrastructure where laboratories are able to be accounted by standards in the industrial world.

Based on the lowest average value of 4.18, stating that the provision of facilities and infrastructure with the Teaching Factory unit is the role of the government in preparing industrial human resources. Teaching and Learning The factory needs to be used in the AK-Tekstil Surakarta program because the production / service based learning model refers to the standards and procedures applying in the industry and is carried out in such an atmosphere in the industry. Teaching Factory implementation requires absolute involvement from the industry, because the relevant parties assess the quality of learning outcomes, the Factory Teaching implementation must also involve the government, local government and stakeholders in making regulations, planning, implementation and evaluation.

### Development of Community College Programs

The results of the calculation of the average value of the college program development indicator is 3.98, while the average score of respondents' responses per indicator for the variable of community college program development Table 4 shows that the highest average value is in the indicators of the development of higher education programs , with instructor exchanges in accordance with their fields is 4.29 and the lowest in aid indicators in developing the relevant curriculum is 3.27.

**Table 4 : Description of the respondent's answer to the development of a community college program**

Variable	Indicator	The mean Score of respondents answer
Development of community college Programs	1) Technical assistance to identify the skills required by industry	4,09
	2) Technical assistance to identify competencies required by industry	4,15
	3) The development of a community college program, with the appropriate instructor personnel exchange personnel	4,29
	4) Assistance in developing a relevant curriculum	3,27
	5) Help to develop the institutional capacity	4,14
	6) Help to advance the programs offered to the industry	3,91
	7) Help to develop a training dan sertifikasi bagi pekerja industri	4,00
Mean Development Program community college		3,98

Based on the highest average score of 4.29, stating that the development of higher education programs, with the exchange of instructors in accordance with their fields, shows that the community college program development strategy by exchanging qualified instructors and experts in their fields, will be able to develop participants' skills hard. The Surakarta AK-Textile Program is supported by curriculum, material, competency standards that must be mastered by program participants to measure hard skills.

Based on the lowest average value of 3.27, stating that assistance in developing a relevant curriculum, the curriculum has a function as an adjustment. The meaning of adjustment is that the curriculum must have the ability to adjust to the development of society, science, technology, and labor needs. Rapid changes in the world of work indicate that the curriculum must continue to be reviewed in order to see whether there is still a match between what is taught in the Surakarta AK-Textile program and the needs of the workforce, especially the textile and garment industry. This relevance is a very important word to achieve the educational objectives of the Surakarta Textile Industry. So that the education curriculum that will be implemented in the community college program must be designed based on the needs of the workforce in the industry.

### HYPOTHESIS TESTING

Data analysis techniques used by researchers in this study is Partial Least Square Path Modeling (PLS-PM). Partial Least Square (PLS) is a type of Structural Equation analysis (SEM) based on components with the properties of reflective and formative constructs. The PLS-PM or PLS-SEM approach is more suitable for predictive analysis with a weak theoretical basis and does not fulfill the assumption of covariant-based SEM (Wong, 2011).

Hypothesis testing can be seen from the value of t-statistics and probability values. To test the hypothesis using statistical values, for alpha 5% the t-statistic value used is 1.96. So that the criteria for acceptance or rejection of the hypothesis is that  $H_a$  is accepted and  $H_o$  is rejected when  $t\text{-statistics} > 1.96$ . To reject or accept the hypothesis using probability,  $H_a$  is accepted if the value of  $p < 0.05$ .

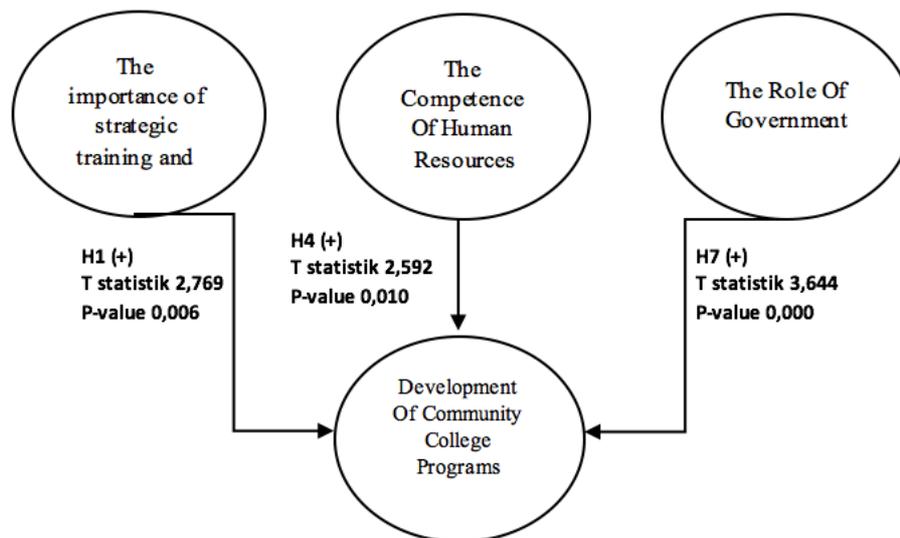


Figure 2 : Model test results Analysis PLS-SEM

**First hypothesis:** The strategic importance of training and development of companies in the textile and garment industry has a positive and significant impact on the development of higher education programs. Findings in this study states that T-statistic value is  $2.769 \geq 1.96$  or  $P\text{-value } 0.006 \leq 5.05$ , so it can be concluded that there is a positive and significant influence on the strategic importance of the training and development of companies from textiles and garment industry towards the development of community college program at a significance level  $\alpha = 0.05$ .

**Second hypothesis:** Competence of human resources has a positive and significant influence on the development of community college programs. The findings in this study states that T-statistic value is  $2.592 \geq 1.96$  or  $P\text{-value } 0.010 \leq 0.05$ , so it can be concluded that there is a positive and significant influence of human resource competence on the development of community college programs at a significance level  $\alpha = 0.05$ .

**Third hypothesis:** The role of the government in preparing human resources has a positive and significant influence on the development of community college program. Findings in this study states that T-statistics value is  $3.644 \geq 1.96$  or  $P\text{-value } 0.000 \leq 0.05$ , so it can be concluded that there is a positive and significant influence from the role of government in preparing human resources for the development of higher education programs at the level significance of  $\alpha = 0.05$ .

## DISCUSSION

It is important to improve training and development by institutions, both industrial companies, educational institutions and other community institutions, so that training and development can improve creative performance which will have implications for the institution's reputation [33, 34]. However, most importantly, training and development will improve the ability of the community in this case program participants and participating communities to obtain the necessary information, guidance and support needed to learn, survive, graduate, and achieve their aspirations.

Company training and development affects the skills and competencies of the community, by instilling an understanding between the theoretical and practical education centers, the community development program is a collaboration between companies and educational

institutions tailored to the needs of the industry, the ability to enter the workforce requires skills and competencies.

Efficient human resources require an accurate assessment and representation of the competencies they possess, what competencies are needed for work and certain positions [37] are strongly influenced by the ability to express differences between competencies acquired and needed by the community. States that organizational decision makers related to human resources must consider the role of empathy, personal values, and models in human resource management. Choosing employees with ethical competencies to work with high responsibility is a very important and indispensable effort in today's global business complexity, so that the direction of developing competencies and developing community college programs must adopt this as a basis for developing community capacity programs [38].

Competence of human resources with a competency-based learning process approach to educational institutions, in this case community college can help in identifying and targeting competencies that need to be developed so that program participants are able to achieve certain levels of standard competence in the industry. According to Fraser [35] states that individual career plans for human resource competencies in an organization must be given a job description. Thus the competencies possessed by individuals will provide the potential to design competency development programs that target improvement in organizational performance in developing programs to increase the potential of resources.

The role of the government in making policies related to infrastructure for the development of higher education programs will have an impact on the achievement of the government's goal of creating industrial jobs with graduates from higher education programs that have competency qualifications needed by the industry. Community colleges established and funded by the government make a significant contribution to employment growth, but on the contrary if the government cuts and does not help in the context of large fiscal employment growth. The impact of community colleges in the local labor market has received attention from industry and made a prominent contribution in meeting a trained workforce in accordance with the needs of the company.

The development of community college program is the role of the central and regional governments to educate the nation's children in terms of providing educational services based on the needs of society, where education creates the ability to make themselves more efficient.

### **THE IMPLICATIONS**

Corporate training and development affects the skills and competencies of the community, by instilling an understanding between the theoretical and practical education centers, the community development program is collaboration between companies and educational institutions tailored to the needs of the industry, the ability to enter the workforce requires skills and competencies.

The output of the participants of the community college program development program should not only produce high absorption capacity in the industry, but the absorption results in the ability to work in industry based on the competencies taught when participating in programs in educational institutions based on the ability to master the latest technology.

In particular, increasing the competence of human resources through empowerment activities (such as training programs, educational sponsorship programs, learning and development programs) carried out by the government and companies, is believed to have positive

implications for society by increasing empowerment in a more decent life, affordable education and individual skills to carry out their lives.

## CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

Based on the results of the research and discussion, the conclusions obtained in accordance with the research flowchart, the findings show that: First, the strategic importance of training and corporate development of the textile and garment industry has a positive and significant effect on the development of community college programs. Second, human resource competence has a positive and significant impact on the development of community college programs. Third, the role of the government in preparing human resources has a positive and significant effect on the development of community college programs.

### Recommendations

This study proposes the following suggestions. First, training and development in companies must use an innovative dual system, this model is intended to combine and instill understanding between theoretical and practical in education centers, collaboration between companies and educational institutions tailored to the needs of the ability and competence of the community in entering working world. Second, the role of the government in making policies related to infrastructure for the development of community college programs will have an impact on the achievement of the objectives of the government to create industrial employment with graduates from community college programs that have competency qualifications required by the industry.

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