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Synergy of Educational Institutions, Industry, and Government in The Absorption of Workforce of Vocational High School Graduates in Kendal Industrial Park, Kendal Regency

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Abstract

This study is carried out to synergize academics, entrepreneurs, and government both central and regional, as it is expected to contribute to the decrease of unemployment rate in Central Java. This study is conducted in Kendal Special Economic Zone in Kendal Industrial Park (KIP) using the collaboration of the three actors with Triple Helix that is considered able to increase creativity, ideas, and skills. In this study, triple helix is used as an analytical knife to bridge the gap between job seekers and employers.

This study aims to describe and analyze the role of Triple Helix in increasing skills and competence of the society in fulfilling labor qualification required by the KIP as well as the synergy of educational institutions, industry, and the government in decreasing the number of employment of vocational high school graduates in Kendal Regency. The method used in this study is qualitative approach. The location or research object is in Kendal Industrial Park in Jalan Raya Arteri KM. 19, Brangsong, Kendal Regency, Central Java, 51371. The results of this study explain that the interaction between industry and academics gives rise to the exploratory innovation capabilities of the company with the Triple Helix framework. In Triple Helix I (static regime), it shows that the government of Kendal Regency plays the main role in regulating university and industry. In Triple Helix II (laissez-faire regime), Kendal Industrial Park becomes the driver for university and government. In Triple Helix III (trilateral-hybrid organization), the university become the active actors in the cooperative relationship between government and industry in a balanced interaction model. From this results, it can be concluded that the Triple Helix synergy enable the increase of the absorption of vocational high school graduates from Kendal Regency in Kendal Industrial Area.

It occurs with the cooperation between university and industry, along with the mentoring in Kendal Industrial Park using “SCORE” training. Besides, cooperation between the government and university also occur with human capital training and development for vocational high school graduates, which include improvement culture, work planning problem solving, cost control system development, and self-development program. Cooperation between government, university, and industry result in a digital-based application development called “Si Lamar”, which brings job seekers and industry together. This will ease vocational high school graduates to find suitable job, and help industry to carry out the recruitment process

Key word :
Synergy of Educational Institutions; Industry; Government; Employment Absorption of Vocational School Graduates; Kendal Industrial Park

INTRODUCTION

The manufacturing industry plays a crucial role in national economic growth. Currently, the manufacturing industry is able to contribute 20 percent to the national Gross Domestic Product (GDP) (BPS, 2020). The development of Kendal Industrial Park (KIP) gives prositive effect for the increase of investment in Indonesia. The first integrated area in the Central Java Province is targeted to absorb investment potential of up to 200 trillion and a workforce of 500 thousand people (https://jatengprov.go.id). KIP is the largest industrial city development in Central Java with a total development size of 2.200 hectare. Company capability to obtain sustainable competitive advantage is strongly determined by the ownership of knowledge and human capital as a strategic assets to achieve sustainability (Ybema et al., 2020). The manufacturing companies in the world use collaborative research and development strategy with other actors, in order to access wider basic resources and knowledge, along with carrying out diversification (Meoli et al., 2013). Collaboration and synergy are important factors that enable innovation to be faster and easier to be done (Leydesdorff et al., 2017).

KIP will be designed as an international standard industrial area with mixed-use development which includes industrial, residential, as well as commercial areas that meet the increasing demand for cost-competitive manufacturing in Indonesia. With the scheme of multinational corporation (MNC) companies, it is expected that KIP would be able to contribute to the decrease of unemployment in Central Java, as shown in Table 1.

Table 1. Proportion of Workforce in the Manufacturing Industry Sector In Central Java of 2019 to 2021

Type of Industry	Proportion of Workforce in the Manufacturing Industry Sector (in percentage)		
	2019	2020	021
Food industry	3,74	3,75	26,97
Beverage industry	0,30	0,30	2,26
Tobacco processing industry	0,34	0,34	1,84
Textile industry	1,00	3,75	5,80
Apparel industry	2,08	0,31	13,00
Leather industry, leather goods, and footwear	0,68	0,32	4,08
Wood industry, goods of wood and cork (excluding furniture), and wickerwork of bamboo, rattan, and others	1,34	0,86	8,49
Paper and paper goods industry	0,22	1,81	1,50
Recording media reproduction and printing industry	0,27	0,52	1,72
Coal products and petroleum refining industry	0,04	1,26	,49
Chemicals and goods made from chemicals Industry	0,31	0,19	,54
Pharmaceutical, chemical drug products, and traditional medicine industry	0,13	0,22	,00
Rubber industry, rubber and plastic products	0,47	0,03	,31
Non-metallic mineral industry	1,02	0,26	,00
Base metal industry	0,20	0,10	,23
Metal goods industry, excluding machinery and equipment	0,54	0,44	,98
Computer, electronic goods, and optical goods industry	0,14	0,86	,88

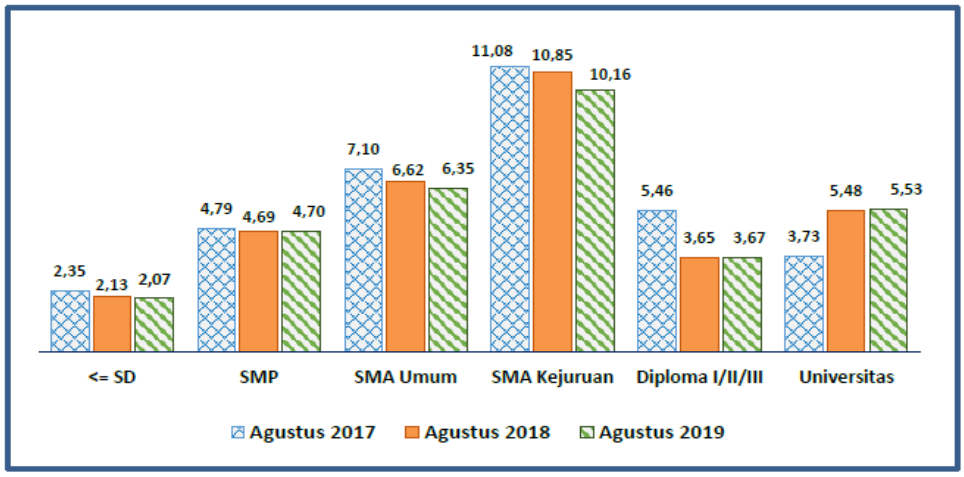
Electrical equipment industry	0,17	0,19	,08
YDTL equipment and machinery industry	0,17	0,47	,10
Motor vehicle, trailer, and semitrailer industry	0,18	0,12	,50
Other transportation industry	0,20	0,14	,36
Furniture industry	0,63	0,14	,74
Other processing industry	0,57	0,16	,05
Repair and installation of machinery and equipment industry	0,15	0,16	,09
INDONESIA	14,91	0,58	100 ,00

Source: Sakernas, BPS. Source Url: Access Time: June 7, 2021, 11:27 am

The percentage of workforce is the number of people who work at least one consecutive hour per day, both paid workers and unpaid workers in the industrial sector per all sectors.

The Central Java Statistics Agency (BPS) stated that vocational high school graduates dominate the unemployment rate. As of August 2019, in Central Java, it was recorded that the unemployment rate with the vocational high school graduates was the highest, around 10.6 percent. The second place was high school graduates (6.35%), followed by college or university graduates (5.53%), junior high school graduates (4.7%), while the last one was from elementary school graduates or not attending school (2.07%).

Until August 2019, the open unemployment rate in Central Java reached 820 thousand people. This number is based on the data from the workforce which reached 18.26 million people. BPS noted that there was an increase in the number of unemployment in the last year which reached 5 thousand people.



Sumber : Data diolah dari Sakernas Agustus 2017-2019

Figure 1. Open Unemployment Rate by Highest Education Level Completed (in percentage) August 2017-August 2019

Kendal Industrial Park (KIP) is believed to be able to make a large contribution to the national economy, especially in Central Java. This crucial role has encouraged many regions in alleviating their unemployment rate. However, this does not mean that all graduates will be able to easily enter the workforce in the KIP, as they still have to go through a rigorous competency test and selection. Therefore, to meet the needs of the HR competency qualification in KIP, the government of Kendal Regency must be able to prepare graduates who are ready to work as professional, competent, and qualified human resources.

KIP offers its factories the availability of young and skilled workforce, competitive labor cost compared to West Java and East Java, as well as management graduates from local university and vocational institutions. The availability of this workforce will attract investors to invest their capital in Kendal. There are several classic phenomenon that still become the biggest problem in reducing unemployment, namely: very large competency gap between user needs and the competencies

possessed by job seekers; non-optimal implementation of job training which involves users from the working world; and non-optimal meeting between job seekers and companies for job recruitment needs. Thus, a system that is able to bridge the gap between the user and the job seeker is required.

Kendal Special Economic Zone in KIP can be realized ideally if it involves academics, entrepreneurs, and government both central and regional. These three parties need to have synergy for the sustainable development of KIP so that it can be beneficial in a fair and realistic manner. Synergy and integrated joint steps are important because Kendal Special Economic Zone cannot be monopolized or controlled by one party and become exclusive. This would have the potential to cause various conflicts, such as social and economic conflicts, as well as non-optimal utilization of the Kendal Special Economic Zone itself.

The collaboration the three Triple Helix actors is considered to be able to increase creativity, ideas, and skills (Etzkowitz, 2011; Etzkowitz & Dzisah, 2008; Etzkowitz & Ranga, 2010). A good collaboration from these three Triple Helix actors are expected to create mutually beneficial synergies, where each actor can play their role optimally in order to realize resilient and sustainable industry (Hernández-Trasobares & Murillo-Luna, 2020). Previous studies have considered cross-sector collaboration using Triple Helix perspective, related to the effect of synergy on business innovation, but it had not considered the effect on the readiness from the government and the community to meet the requirement of HR qualification (Cai & Etzkowitz, 2020). Triple Helix approach, which is a part of many literatures regarding innovation system, identified certain agents which interactions are important to promote innovation, such as university, industry, and government (Etzkowitz & Dzisah, 2008; Linton, 2018). In this study, Triple Helix is used as an analytical knife to bridge the gap between job seekers and companies. The purpose of this study is to describe and analyze the role of Triple Helix in increasing the skills and competencies of the community in meeting the requirement of workforce qualification from KIP. This study wants to understand the synergy between educational institutions, industry, and the government in decreasing the number of unemployment of vocational high school graduates in Kendal Regency.

LITERATURE REVIEW

In the literature review, there are several aspects that will be discussed, including definition, review of previous studies, as well as the dimensions of the variables used in this study, namely Triple Helix, skill, competency, and recruitment.

Triple Helix

Analytically, the Triple Helix model has been conceptualized as two working framework of institution and communication that complement each other and reflect two different but related problems, namely create societal conditions for discontinuous innovation, and have further understanding of “normal” operation of the interaction between university-industry-government through the development of more proper indicator (Etzkowitz & Ranga, 2010).

University, industry, and government are seen as a subset of social system that develops together, distributed, and unstable. The institutional communication between these three acts as selection mechanism, which will generate new innovation environment, as well as assuring system “regeneration”, since the new combination in the mode is distributed locally. The communication and differentiation between these three rise generation, diffusion, and the use of knowledge: (i) functional process, between science and market; and (ii) institutional process, between private and public control in university, industry, and government level, which enable various selective reciprocal adjustment rate. Besides, internal differentiation in each institutional environment create new type of relationship and structure between environment, such as industrial liaison office in university or strategic alliances between companies, and this will create new network integration mechanism (Etzkowitz & Dzisah, 2008).

According to Leydesdorff and Etzkowitz (…), the emergence of Triple Helix model is caused by several world development that arise at the same time. The first is stronger interconnection between knowledge-generating institutions and knowledge users. For example, there are many industry actors and scholars who work together to do research priority that will be carried out. When it occurs, there are knowledge and technological transfers from scholars who work at university to the industry. Second, the increasingly massive development of information technology and communication such as internet, the change of desktop computer to laptop, and table telephone to mobile phone, makes knowledge easy to obtain from any sources. Third, the fast growth of IT and communication encourages the change of coordination form between university, industry, and government from vertical to lateral, which cut the complicated bureaucracy. Therefore, the three parties can be more solid from time to time.

There are different indicators used for each Triple Helix variable. University is measured through the indicator of idea generation, mentoring, and networking. Government is measured through the indicator of regulation, law, and policy. Lastly, industry is measured through the indicator of ethics, IPR protection, and ownership (Wasitowati & Asyhari, 2015).

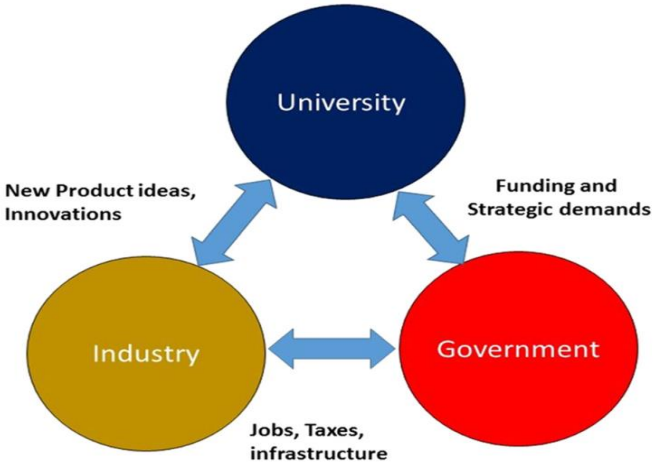


Figure 2. Triple Helix Component (Wasitowati and Asyhari, 2015)

Triple Helix innovation model also blur the boundaries of the traditional basic role of university, industry, and the government. University can take part in commercial activities through patent and licensing, moving outside the basic research production. University still becomes the main source for knowledge production, while the industry becomes the main vehicle for commercialization, and the government maintains its regulatory role.

Skill

Skill is the ability to use minds, thoughts, ideas, and creativity in doing, changing, or creating something to have more meaning and able to create value from the results of the job (Al Mamun et al., 2019). Skill is an ability to translate knowledge into practice, so that the desired work results can be achieved. Soft skill is personal, social, communication, and behavior of self-management, which include a wide spectrum: self-awareness, trust, consciousness, ability to adapt, critical thinking, organizational awareness, attitude, initiative, empathy, self-confidence, integrity, self-control, leadership, problem solving, risk-taking, and time management (Fazel-Zarandi & Fox, 2012). Therefore, it can be concluded that skill is the implication of an activity in fulfilling a task easily and properly.

There are several skills that must be owned by human resources, namely (Kamaludin & Alfan, 2010):

a) Basic literacy skills, such as writing, counting, and listening.
b) Conceptual skills, which is mental ability to coordinate and integrate all interests and activities of the organization.
c) Administrative skills, which is all ability related to planning, organizing, staffing, and controlling. This skill includes the ability to follow policy and procedure, manage with limited budget, and others.
d) Technical skills, which is the skill to use equipment, procedures, or techniques from certain field.
e) Human-relation skills, which is the skill to develop harmonious relationship among all members of the institution or organization.
f) Decision-making skills, which is the skill to identify problem as well as offering various solution alternative for the problems.

Competency

Competence means skills, abilities, and authority (Hertati, 2015). Competence in the HRM perspective is a combination of knowledge, skills, and personality that can improve employee performance, so that they can contribute to the success of their organization (Galleli & Hourneaux Junior, 2019). Competence becomes an important factor in the practice of human resource development (Hitt et al., 2016).

Competence is individual ability or capacity to do various tasks in a job, and this ability is determined by two factors, namely intellectual ability and physical ability (Robbins & Judge, 2007).

Competence is a characteristic that underlies a person and is related to the effectiveness of the individual's performance in his work (Spencer and Spencer, 1993).

Aspects contained in the concept of competence include knowledge, understanding, skill, value, attitude, and interest.

Recruitment

Recruitment is a process to get prospective employees who have the abilities that match the qualifications and needs of an organization or company (Bina et al., 2021). Recruitment is a process to get a number of qualified human resources (employees) to occupy a position or job in a company (Usmani, 2020).

Recruitment is an important issue in the workforce procurement. Recruitment is successful if many applicants meet the qualifications set by the company. It is an activity to find and influence workers, so that they want to apply for job vacancies that are still vacant in the company (Bazana & Reddy, 2021).

Recruitment is the process of finding and attracting applicants for employment within and by an organization. Prospective workers that will be recruited can be taken from both internal and external organizations. Recruitment of workers from within the organization is usually carried out by organizations/companies that have been running for a long time and have a good career system.

Data and Research Methods

This study uses qualitative approach, which is aimed to describe and analyze the phenomenon, events, social activity, attitude, belief, perception, and thought of an individual or a group. The location or the object of this study is in Kendal Industrial Park in Jalan Raya Arteri KM. 19, Brangsong, Kendal Regency, Central Java, 51371. The data of this study is collected through data collection instrument, observation, interview, and documentation. The data source is divided into primary and secondary data. Primary data is a data obtained from the first source through the procedure and data collection technique in the form of interview, observation, or the use of measurement instruments that is specially designed according to its purpose. On the other hand, secondary data is a data obtained from indirect source, usually in the form of documentation and official archives.

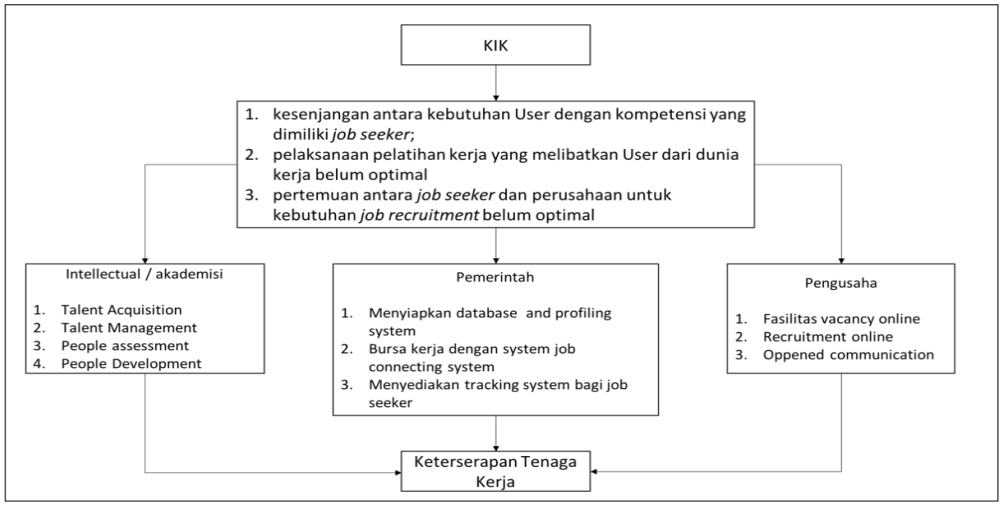


Figure 3. Research Framework

Finding and Discussion

The Relationship between University and Industry

University plays a role in providing basic research and education for individuals. At first, interaction between university and industry lays in the two elements. University acts as the digital industry development catalyst through education, research, and innovation. University is required to be able to accelerate the pace, so that it is at least in tune with the changes that occur. It becomes a place of preparation or training for human resource that provide research where industries will be built to produce commercial goods. Other interactions are intertwined with the existence of coaching programs, both in the form of community service and assistance.

The shifting role of the university to increase national competitiveness and develop the national economic strongly depends on innovation. Industrial innovation that is useful and beneficial

for the needs of the community is affected by the research from university. University is a research institution that has a role in industrial cycle to create product according to the market needs and positioned itself as a component which conduct research and product development. Creating a research institutions require an expensive cost, while almost all industries in Indonesia are not equipped with research institutions. Therefore, university must act as an industrial research institution. The role of university should be more proactive in encouraging research and development, education, and community service as instruments to produce innovations with economic value.

University is also a laboratory for innovation of new commercial product as well as mental shaper and individual leadership spirit. Learning at the university is aimed to prepare individuals to meet the qualifications required by the working world. The university must be able to prepare human resources who are able to brand themselves with quality knowledge, capabilities, and integrity as a capital to face talent acquisition.

In the knowledge-based economy, university becomes the key player in the innovation system, both as human capital supplier and as a space to create new companies. University can conduct technological transfer, and it needs to be supported by the government regulation that governs funding to support research. On the other hand, researcher in academic community can concentrate more on profit by patenting and commercializing their findings (Dunan dan Edi, 2017). University should be more proactive in encouraging research and development, education, as well as community service as an instrument to produce innovations with economic value.

Interaction between industry and academics gives rise to the exploratory innovation capability of the company with the Triple Helix framework. This relationship focuses on explorative innovation and becomes an important insight because the government tends to prefer supportive interactions that have clear results. Academics are well positioned to assist companies in exploring which scientific and technical capabilities will best support the industry in the future. Therefore, encouraging relationships that have an exploratory role can provide the most benefit. The relationship provides an opportunity for the knowledge pool to be explored and increases the likelihood that the university is a partner to consider other new areas that could be a value for the company for future technological growth and/or reposition.

The Relationship between University and Government

The power of interaction between the government and university depends on the general relationship of the government and policy toward higher education. The government acts as a catalyst, facilitator, and advocate that provide stimulation, challenge, and encouragement so that business ideas move to a higher level of competence. Support from the government can be in the form of commitment to use their political power proportionally and provide a good public administration, in addition to financial support, incentives, or protection. The government has a role as a regulator who issues policies related to people, industry, institution, intermediation, resource, and technology. The government can accelerate development by creating policies that can enable a conducive business climate for the industry. They can also act as an investor by empowering state assets to be productive within the scope of the creative industry and being responsible for industrial infrastructure investment. As the government acts as urban planner, creativity will thrive, along with cities that have a creative climate. In order to make the development of creative economy to run well, it is necessary to create creative cities that are able to be an attractive magnet for individuals to open their businesses in Indonesia.

The Relationship between Government and industry

The relationship between the government and industry depends on the government attitude towards the market. In liberal economy, the government would have limited role to prevent market failures. On the other hand, when the government is more involved in the economy, the role of the government is industrial regulation. There are also two ends of the spectrum, leaving room for substantial variation, based on circumstances and disciplines. The government acts as a regulator, supervisor, driver, and gives stimulus for industrial growth. The industrial development strategy is realized by synergy between the government and all stakeholders, including the business world in ensuring the sustainability of the industry in the future.

The Triple Helix Role in the Absorption of Workforce of Vocational High School Graduates in Kendal Industrial Park, Kendal Regency

The model from Etzkowitz (2002) showed that university, industry, and the government initially working separately, and then interacting together. During the first stage of developing a regional innovation system, Kendal Regency developed a space for third parties to concentrate on industrial activities by building and developing the Kendal Industrial Park. Then, entering the second

stage, Kendal Regency started to develop a space for the three parties to create new strategies and ideas. During the third stage, the area developed a mechanism that forms a new organization to realize the strategy that has been developed in the previous stage.

The implementation of the model from Etzkowitz (2002) explained the position of university-government-industry. In the Triple Helix I (static regime), it shows that the government of Kendal Regency plays the main role in regulating university and industry. In Triple Helix II (laissez-faire regime), Kendal Industrial Park becomes the driver for university and government. In Triple Helix III (trilateral-hybrid organization), the university become the active actors in the cooperative relationship between government and industry in a balanced interaction model.

Other interactions that can be done are making cooperation program, such as community service from university to strengthen the competence of the community around the Kendal Industrial Park, so that they are able to meet the requirements opened by the Kendal Industrial Park. The process of coaching and training for vocational high school graduates are carried out by the Economic Faculty of Wahid Hasyim University, Semarang. The training is conducted by trainers from the university to increase competence, digital skills and abilities, as well as basic management skills. Although the vocational high school graduates have theoretically focused on one vocational field, there is still a very large gap with the needs of the industry. Among them is short training related to the development of human capital for vocational high school graduates, which are framed in:

a. SCORE (sustaining competitive and responsible enterprises) training, a program that aims to create more productive, competitive, and environmentally-friendly small and medium industry (SMI). This program helps the government, industry association, and labor union to develop export and domestic industrial sector. This SCORE training is a practical training and consultation program that aims to increase productivity and work condition in the industry. Wahid Hasyim University, Semarang includes its work team and provides assistance to industries in the Kendal Industrial Park to maintain a competitive and responsible company.
b. Workshop series in order to develop and improve HR management system that is in accordance with the company culture and business condition. In general, this program includes training about facing talent acquisition, talent management, people assessment, and people development. Talent acquisition helps the vocational high school graduates to find their best talent and potential to join an organization in the right place and at the right time. Talent management helps and facilitates participants to design and carry out the planning, self-development, and potential mapping processes. People assessment provides services for vocational high school graduates to carry out an assessment process based on the required competencies. The training and development program include improvement culture, problem solving, work planning, cost control system development, and self-development program.
c. The government of Kendal Regency as a catalyst can create digital-based application called “Si Lamar” to accommodate job seekers and put up company profiles that need human resources. This application is managed by Kendal Regency Labor Office which will accommodate job vacancies issued by the business world and the industrial world, then upload them by including the requirements and qualifications specified. This platform will make it easier for vocational high school graduates to find suitable jobs and helps the industry to easily carry out the recruitment process. This digital platform must be carried out together with the industrial sector by providing information regarding recruitment, required positions, qualifications, and requirements. The information posted will be a reference for job seekers in determining where they will apply for the job.

Conclusion

The implementation of the synergy of relations and linkages between the university-government-industry encourages the growth of entrepreneurial vocational graduates in Kendal Regency, encourages an increase in the Kendal Human Development Index (HDI), and reduces the high number of unemployment by making the Kendal community as a player in the industry. The relations and linkages are manifested in Figure 4.

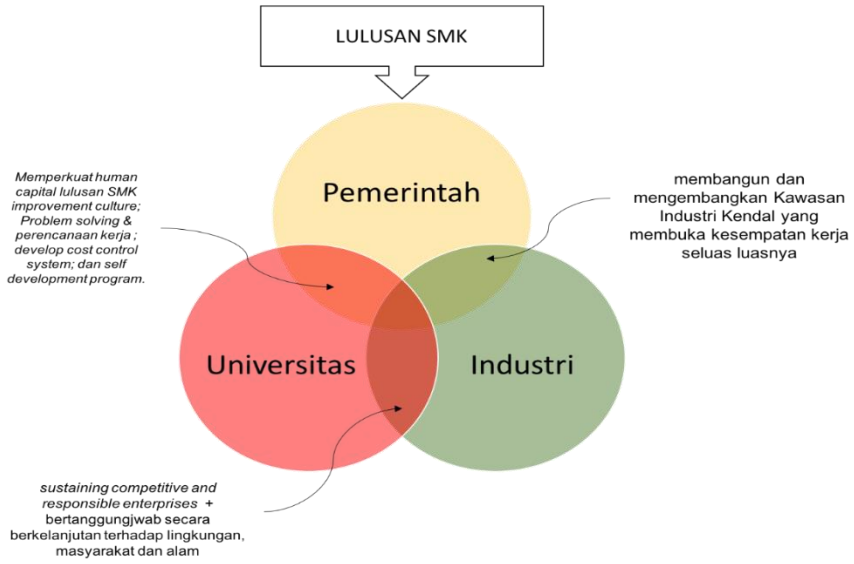


Figure 4. Synergy of the Government, Academics, and Industry in Alleviating Unemployment for Vocational High School Graduates in Kendal Regency

The era of rapid technological change can be seen in various aspects: social, political, economic, legal, and so on. Its characteristics and consequences tend to be unpredictable due to rapid and dynamic environmental changes. The current technological environment is quite extreme and full of uncertainty because of the complexity and dynamics of technological change. The dynamic environment is closely related to the rapid changes, namely the innovation of science based on the economy and society. The challenge is how universities deal with diverse influences with the level of knowledge needed to deal with these effects that can be patented and commercialized (Dunan & Prihantoro, 2017). Therefore, in its implementation, the triple helix synergy to increase the absorption of vocational high school graduates of Kendal Regency in the industry, especially Kendal Industrial Park, is carried out in:

1) Cooperation between university and industry: Provide assistance to industries in the Kendal Industrial Park to maintain a competitive and responsible company with “SCORE” training.
2) Cooperation between university and the government: Human capital training and development for vocational high school graduates to meet the qualifications required by the industry. The training and development program include improvement culture, problem solving, work planning, cost control system development, and self-development program.
3) Cooperation between the government and industry: Develop a space for third party to concentrate to the industrial activity by building and developing Kendal Industrial Park.
4) Cooperation between the government, university, and industry: Develop a digital-based application called “Si Lamar” to accommodate job seekers and put up company profiles that need human resources. This will ease vocational high school graduates to find suitable job, and help industry to carry out the recruitment process.

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