Entrepreneurial Learning through Penta-Helix Model in Indonesian Vocational High School

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Abstrak

Penelitian ini mengevaluasi Pembelajaran Kewirausahaan dengan menggunakan model Penta-helix saat ini di SMK Provinsi Jawa Barat. Elemen Penta-Helix ekonomi kreatif adalah Academics, Business, Communi-ties, Government, dan Media (ABCGM) yang menerapkan 3C: Connect-Collaborate-Commerce/Celebrate oleh seluruh pemangku kepentingan. Penelitian ini menggunakan penelitian tindakan kelas dan metode kualitatif dan kuantitatif dengan data yang dikumpulkan pada tahun 2018-2019. Penelitian ini dievaluasi dengan SWOT (Strengths, Weaknesses, Opportunities, dan Threats). Analisis ini menganalisis indikator-indikator dari Analisis SWOT dengan menggunakan perhitungan IFE dan EFE untuk mendapatkan strategi dalam meningkatkan penerapan Penta helix di SMK Kewirausahaan. Pada Komputasi IFE, skor Strengths merupakan skor yang paling tinggi dibandingkan dengan skor Weaknesses yaitu sebesar 1,924. Pada Komputasi EFE, skor Ancaman lebih tinggi dibandingkan Peluang yaitu 1.585. Hasil penelitian menunjukkan bahwa strategi tersebut adalah melakukan uji kemampuan usaha untuk dipetakan ke dalam kelompok usaha yang sudah kreatif dan yang belum kreatif serta mensinergikan SMK. dan UKM di Jawa Barat untuk membuat program yang mengarah pada kreativitas

Kata Kunci: *Ekonomi Kreatif, Transfer Teknologi, Analisis SWOT, SMK*

Abstract

This study evaluates the current Entrepreneurial Learning using Penta-helix model at Vocational School in West Java Province. Penta-Helix elements of the creative economy are the Academics, Business, Communi-ties, Government, and Media (ABCGM) that employ 3C: Connect-Collaborate-Commerce/Celebrate by all stakeholders. This study used action research and qualitative and quantitative methods with data gathered in 2018-2019. This study evaluated with SWOT (Strengths, Weaknesses, Opportunities, and Threats). It analyzed indicators from SWOT Analysis using IFE and EFE computation to get the strategy to improve the implementation of Penta helix in SMKs Entrepreneurship. In IFE Computation, the Strengths score is the highest than the weaknesses score, which is 1,924. In EFE Computation, Threats score higher than Opportunities, which is 1 585. The research shows that the strategy is conducting business capability tests to be mapped into business groups that are already creative and thos`e that have not yet been creative and synergizes the SMK and SMEs in West Java to create programs that lead to creativity

Keyword: *Creative Economy, Technology Transfer, SWOT Analysis, Vocational high school*

INTRODUCTION

Indonesia is one of the world's developing countries. Looking at economic growth is one way to set a standard. As a result, economic growth must be strengthened for a country to prosper (Kembuan et al., 2023). Economic development attempts to increase and improve the community's well-being. As a result, one of the Indonesian government's economic growth objectives is to promote vocational high school entrepreneurship. Entrepreneurship at vocational high school is a form of creativity and invention that every vocational high school graduates possess in order to create additional value for themselves, benefit others, or society, and generate mutual gain (Muhyi & Chan, 2017).

It has been determined that the development of economic activities based on individual creativity, skills, and talents to create individual creative and creative power that has economic value and affects the welfare of the Indonesian people, in order to support creativity economic development, is necessary (Louw & Deacon, 2020).

A collection of instruments that supports the learning process is required to generate vocational high school (SMK) students who have the mentality and preparedness to operate independently as entrepreneurs (Martawijaya, 2015). One of the challenges that vocational high schools confront in adopting entrepreneurship is the limited supporting facilities and infrastructure that vary depending on the study program / specialization (Komansilan et al., 2023).

The Ministry of Education and Culture promotes Penta helix synergy in order to increase the quality and progress of SMK graduates. Penta Helix is entering an era of cooperation, innovation, and creativity, which will be critical for society, organizations, and countries to not only survive but also compete and prosper (Li et al., 2019).

Since 2009, Indonesia's creative economy development model has relied on a triple helix known as ABG (academic, business, and government), which necessitates collaboration and synergy among three main actors: government, industry, and intellectuals (a team of experts from academia and the public sector) (Fitriani et al., 2020). However, the trend presently reveals that the creative community's active engagement in many locations is shifting, and triple helix cooperation is evolving into a Penta Helix, with the addition of community and media aspects (Aribowo et al., 2018). Responding to further developments that are expected to rapidly develop the creative economy, the Penta Helix collaboration between the government, private, intellectual, creative community, media, and investors must be implemented at this time to result in a healthy creative economy so that an opportunity sector increases the competitiveness of product exports in a relatively short period (Effendi et al., 2016)(Sudiana et al., 2020).

The difficulties in collaborating among parties in the Triple Helix and Penta Helix models in the creative economy clusters for SMKs Entrepreneurship that occur in West Java, 1) The ability to innovate and compete was still weak, affecting the performance of SMKs Entrepreneurship; (2) The quality and quantity of the creative industry were currently still weak. Human resources (HR) still had a limited competence, particularly in terms of innovation and entrepreneurship in SMKs. (3) The development of technological change was so rapid that UMK ac-tors were compelled to adjust to the technological change; (4) The rapid environmental changes related to business creativity and Innovation; (5) The consumer intelligence to meet needs, so Innovation was required in meeting consumer expectations; (6) The changes in market tastes and technologies that required fast products and services (Fitriani et al., 2020)(Rosyadi et al., 2020). The first is connected to the triple helix and penta-helix as an academic, government, industrial, community, and social media initiative, especially in the West Java area.

RESEARCH METHOD

SWOT (Strength-Weakness-Opportunity-Threats)

SWOT Method aims to identify the strengths, weaknesses, opportunities, and threats in Vocational high school entrepreneurship (Gatut, 2017). A Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis used to discover what strategies used in developing the Vocational high school entrepreneurship after noticing the strengths, weaknesses, opportunities, and threats encountered by the vocational high schools in Bandung. A SWOT analysis was a management tool used for evaluating internal and external organizations that provided information about important issues for vocational highschools in Bandung (Lawrence G Fine, 2009). SWOT matrix was carried out based on the development of the internal environment that occurs from the IFE matrix (Wahjusaputri et al., 2019).

Interview conducted to get the valid data for SWOT Analysis. The interviewees in this research are Head of Vocational Training, West Java Education Office, Principle of SMKN 11 Bandung, SMKN 9 Bandung, SMKN 1 Mundu, SMKN 1 Pacet, SMKN 1 Cipendeuy, and SMKN 6 Garut.

IFE and EFE Matrices

The collected data were analyzed using IFE and EFE Matrices. EFE Matrix (External Factor Evaluation) is a strategy to summarize and evaluate economic, social, cultural, demographic, environmental, political, government, legal, technological and competitive information faced by companies. Whereas IFE Matrix (Internal Factor Evaluation) is a company matrix that analyzes two variables, namely strengths, what a company has and the weaknesses that exist within the company itself (Janiah, 2019).

The Internal Factor Environment (IFE) and the External Factor Environment (EFE), within SWOT analysis used to determine the development strategy of Vocational high schoolEntrepreneurship in West Java. After finding out the score in each matrix in the IFE and the EFE, the Weighted Score was reached.

RESULT AND DISCUSSION

The data were qualitatively evaluated to explain the outcomes of validation data (assessments) from experts who offered valuable information for the progress and comprehensiveness of the Penta Helix model. This study aims to investigate the social situation at the center of managing industries in West Java, specifically: (1) Places, which covered seven managing industrial centers in West Java; (2) Actors, who

included academics, business (industry), community, government, and media; and (3) Activities, which included collaborative activities amongst associated parties. The terms of current stakeholder relationships are still shared.

SWOT Analysis

SWOT Analysis conducted based on literature review and interview of 6 (six) vocational high schoolin West Java. SWOT Analysis provides an analysis of the strengths, weaknesses, opportunities, and threats influencing Penta Helix implementation in vocational high schools (Fitriani et al., 2020). According to the analysis, the strengths include the availability of easily accessible raw materials, the processing of contemporary goods, the availability of creative people resources, the resultant nonhazardous chemical products, qualified products, and product-acknowledged by the public. Weaknesses include inadequately meeting consumer demand, a lack of product promotion, and low production costs. Marketing-only covers West Java province, inefficient product marketing channels, and a lack of expertise and insight into human resources.

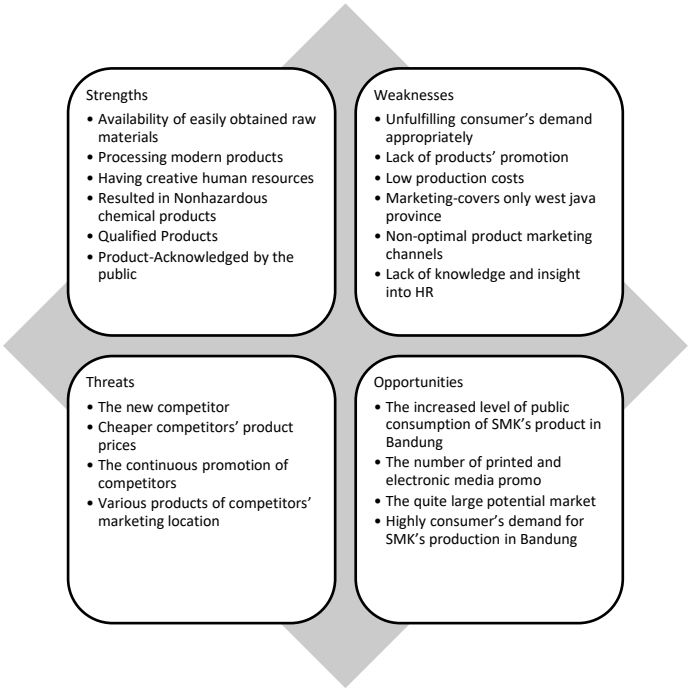

Figure 1. SWOT Analysis of Vocational highschool's Entrepreneurship

The growing degree of public consumption of SMK's product in West Java, the amount of printed and electronic media pro-motions, the relatively big potential market, and high consumer demand for SMK's production in West Java are the Opportunities. Threats include a new rival, lower competitor product pricing, constant competitor advertising, and diverse goods of competitors' marketing location. Strategy Following the completion of the SWOT analysis, the SWOT plans are developed.

Table 1. SWOT Strategies

	Strengths	**Weaknesses**
Opportunities	1. Increasing product marketing through print and electronic media 2. Offering product and cooperating with several producers 3. Collaborating amongst the government with universities and business (industry) to implement the result of research	1. Increasing marketing reach both in and out of West Java and the production 2. Organizing and improving the learning and training system as a whole collaboration and building network with people who support the business
Threats	1. Conducting business capability test to be mapped into business groups that already creative and those that have not yet been creative 2. Synergizes the SMK and SMEs in	1. Improving the ability of the industry through technology transfer and knowledge 2. Establishing a Product Certification Institute to audit product

	West Java to create programs that lead to creativity	quality so that product have standard 3. Increasing production efficiently

The problems faced while developing Penta Helix ABCGM are very diverse (Effendi et al., 2016). Consequently, the handling and attention of various other parties such as academics, government, and financiers are needed (McMullen & Shepherd, 2006). The synergistic relationship that results in forms a competitive advantage for small and medium businesses. The research material provides information for the ABCGM Community in developing new entrepreneurs (Martins, 2016). There is limited knowledge/literature about the Penta Helix model to guide organizations in increasing the output of innovations of entrepreneurial products (Björkdahl & Börjesson, 2012). However, Jackson (Jackson, 2008) identified five (5) fundamental factors that facilitated the success of Innovation namely strategic policy commitment from institutions for product innovation; inclusive processes and discipline to develop social Innovation; strong and diverse approaches to engage community; a commitment of academics to provide free information and strategies for research and Innovation in the process of technology transfer; mobilization of internal and external resources to support Innovation (Matheson, 2008).

The interviews results of this research on the application of the Penta Helix model (academics, business, community, government, and media) in achieving Champion in West Java Province, resulted in:

1. Providing training and advising in the areas of finance, marketing and halal product processing (Campus/academic access)
2. Assisting the progress of SMKs Entrepreneurship with access to finance from Islamic and conventional banks.
3. Providing opportunities for SMKs Entrepreneurship to participate in competitions or exhibitions of products both nationally and internationally through government access.
4. Assisting product marketing with infrastructure and digital technology with online and electronic media access.

IFE and EFE Matrices

The indicators for IFE and EFE computation based on SWOT Analysis (Leliga et al., 2019). In the IFE Computation (Table 2), the Strengths score is higher than the Weakness score, which is 1,924. As a result, strength indicators should be prioritized in order to improve the implementation of the Penta helix in SMKs that are Product-Acknowledged by the Public, Having Creative Human Re-sources, Availability of easily obtained raw materials, Resulted in Nonhazardous Chemical Products, Qualified Products, Processing Modern Products.

Threats have a greater score in EFE Com-putation (Table 3) than Opportunities, which have a score of 1,585. As a consequence, Threats indicators should be highlighted in order to enhance the application of the Penta helix in SMKs, which are varied products of rivals' marketing location, a new competitor, constant promotion of competitors, and lower competitor product pricing.

Table 2. IFE Computation

IFE	Weight Value	Rating	Score
Strengths Indicators			
The availability of easily obtained raw materials	0,087	4	0,348
Processing modern products	0,085	3	0,255
Having creative human resources	0,093	4	0,372
Resulted in Nonhazardous chemical products	0,077	4	0,308
Qualified Products	0.093	3	0,279
Product-Acknowledged by the public	0,095	4	0,380
Total Strengths Score			1,924
Weaknesses Indicators			
Unfulfilling consumer's demand appropriately	0,065	3	0,195
Lack of products' promotion	0,075	3	0,225
Low production costs	0,055	2	0,110
Marketing-covers only west java province	0,065	3	0,195
Non-optimal product marketing channels	0,078	3	0,234
Lack of knowledge and insight into HR	0,067	3	0,201
Total Weaknesses Score			1,160
Total IFE			3,102

Table 3. EFE Computation

EFE	Weight Value	Rating	Score
Opportunities Indicators			
The increased level of public consumption of SMK's product in West Java	0,088	4	0,352
The number of printed and electronic media promo	0,095	4	0,380
The quite large potential market	0,092	3	0,276
Highly consumer's demand for SMK's production in West Java	0,090	3	0,270
Total Opportunities Score			**1,278**
Threats Indicators			
The new competitor	0,145	3	0,435
Cheaper competitors' product prices	0,155	2	0,310
The continuous promotion of competitors	0,135	3	0,405
Various products of competitors' marketing location	0,145	3	0,435
Total Threats Score			**1,585**
Total EFE			**2,863**

CONCLUSION

Strength and threat indicators have the greatest score based on internal (IFE) and external (EFE) elements. Thus, the Strength-Threats strategy is a strategy that is highly prioritized and must be adopted as soon as possible in order to enhance the implementation of the Penta Helix in SMKs Entrepreneurship. The approach is to perform business capacity tests to be mapped into business groups that are already creative and those that are not yet creative, and to collaborate with SMK and SMEs in West Java to develop programs that lead to creativity. SMKs Entrepreneurship is waiting on the government and business to offer training, mentoring, and opportunity so that their goods may be recognized internationally. The Government is also expected to provide opportunities for SMKs Entrepreneurship to hold exhibitions in the international forum to introduce their products with affordable funding.

The government's support for the West Java Province Cooperative and SMEs in the ABCGM (Academy, Business, Community, Government, and Media) synergy facilitator plays a significant role in SMKs Entrepreneurship. The emerging entrepreneurial and creative economy was having a huge impact. Entrepreneurial Excellence and Creative Economy in SMKs Entrepreneurship were decided by the entrepreneurial character's collaboration. However, the government's support of infrastructure aided business actualization and fostered the formation of new firms. The whole action research method was then translated into a formulation of the Penta helix development model that could be duplicated in other locations around West Java Province, particularly in Bandung.

ACKNOWLEDGMENT

Kenali pihak-pihak yang membantu penelitian, terutama yang mendanai penelitian Anda secara finansial. Sertakan individu yang telah membantu Anda dalam studi Anda: Pembimbing, Pendukung keuangan, atau mungkin pendukung lain, misalnya Korektor, Pengetik, dan Pemasok, yang mungkin telah memberikan materi. Jangan menuliskan salah satu nama penulis.

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