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The Teaching Factory Planning
Concepts and Strategies for Higher Vocational Education Majoring in Agribusiness Management

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ABSTRACT

This study aims to formulate a Teaching Factory (TEFA) planning strategy, especially in the Department of Agribusiness Management at Politeknik Negeri Jember. The urgency of research can be used as the basis for pioneering TEFA in the Department of Agribusiness Management that is integrated and sustainable. This research is quantitative descriptive research conducted purposively at the Department of Agribusiness Management, Politeknik Negeri Jember. The analytical tool used in this research is a SWOT analysis. The results of the analysis show that several alternative strategies that can be carried out include: (a) Optimizing TEFA startup facilities and infrastructure; (b) Optimization of learning methods adapted to industry; (c) Improving the quality of TEFA products; (d) Strengthening cooperation with industry; (e) Improving the quality of human resources; (f) Identification of the marketing mix; (g) Increasing technological innovation and following corporate culture; and (h) Increasing partnership cooperation.

Keywords: *Teaching Factory, strategies, SWOT, vocational education*

1. INTRODUCTION

Politeknik Negeri Jember is one of the prominent vocational universities that print a skilled and competent generation. It follows the vision of Politeknik Negeri Jember, which will become a Superior State Polytechnic in Asia by 2035. One of its missions is to improve innovative and competitive applied education. Several strategies have been developed, ranging from applying product-based curricula, links, and matches with industry. Furthermore, industry-based learning development efforts also began to be developed through the construction of the Teaching Factory (TEFA). Teaching factories can be a concept of learning development in actual circumstances to bridge the competency gap between the given science and the needs of the industry. Until now, there have been as many as twenty-three TEFA spread across several departments and Integrated Development Unit (U.P.T.) Jember State Polytechnic [1].

The Department of Agribusiness Management is one of the majors at Politeknik Negeri Jember that has initiated the establishment of TEFA. Tefa's formation plan is based on the concept of a product-based curriculum built in the Agribusiness Management Department. To support the implementation of the curriculum by providing industry-based learning services and direct practice that is standardized according to industry needs. It is an effort to develop innovative learning and effective practice. TEFA startup that the Department of Agribusiness Management will initiate is TEFA Agrimart, focusing on marketing services. This TEFA can develop learning methods of courses and practicums in the Department of Agribusiness Management. It is expected that this TEFA can also be a place or means of competency tests. In line with the development activities of competency test schemes carried out in the Department of Agribusiness Management, the "Operational Marketers" scheme results from links and matches the industry.

The conformity of TEFA Agrimart initiation with industry, and the availability of supporting Human Resources (H.R.), as well as the existence of facilities in the form of laboratories (Entrepreneurship Laboratories,

Computer Laboratories, and Business Communication Laboratories) located in the Department of Agribusiness Management, can be used as value-added. TEFA Agrimart will also synergize and collaborate with several teaching factories in the Politeknik Negeri Jember environment, especially in marketing. However, for starters, startups in the Department of Agribusiness Management are considered necessary for a study as a form of projection and a basic framework/masterplan in the formation of TEFA Agrimart Department of Agribusiness Management to follow the main objectives of the actual teaching factory program and be able to contribute to the acceleration of the vision and mission of Politeknik Negeri Jember.

The specific purpose of the research is to produce the concept of the TEFA Agrimart master plan in the Department of Agribusiness Management of Politeknik Negeri Jember based on potential analysis and identification of obstacles and challenges. The urgency of this research is that the TEFA Agrimart master plan concept can be used as a basis in the pioneering of TEFA in the Department of Agribusiness Management, which is integrated and sustainable. Furthermore, theoretically, the results of this study can also contribute to the concept of masterplan preparation, potential analysis, and teaching factory model.

2. CONCEPTUAL BACKGROUND

2.1. State of the art

This research includes several articles from both national and international journals from previous research related to teaching factories. Identification of TEFA management components is taken from some of the results of previous research, namely on teaching factory management reviewed from planning, organizing, implementation, supervision, and evaluation. The research also discusses the supporting factors and obstacles to teaching factory management to develop the quality of learning [2]. Concerning the management aspect, strengthening also included theoretical studies on management principles [3]. Furthermore, because the startup is based on marketing services, this library study also emphasizes marketing concepts and strategies that discuss strategic marketing, explaining the actual consumption and marketing assumptions held by marketing academics [4], [5].

3. RESEARCH METHODS

This research design is quantitative descriptive research conducted purposively in the Department of Agribusiness Management of Politeknik Negeri Jember. The analysis is used to analyze potential regions using location quotient analysis approaches and growth ratio models to determine the suitability of regions and environmental conditions with teaching factory startups. Empirical studies of the preparation of master plans include swot methods in the master plans are created to identify strengths, weaknesses, opportunities, and threats [6]. Furthermore, several other studies using process hierarchy analysis help determine the priorities of several criteria by analyzing pairs of each criterion, structuring problems, and incorporating considerations to produce priority scales [7].

4. RESULTS AND DISCUSSION

4.1. Potential Territory

The potential analysis to be used is the result of an approach from empirical studies that discusses the analysis of the area's potential for the development of teaching factories [8]. Related to the picture of potential in Jember Regency can be obtained based on the results of empirical studies on the potential of agribusiness in Jember Regency [9]. The preparation of the concept of teaching factory in the Department of Agribusiness Management of Politeknik Negeri Jember is based on the condition of territorial potential, one of which is done using the Location Quotient (L.Q.) analysis approach. The analysis results showed that the agricultural sector is the most potential sector in the Jember Regency area. It can be seen from the value of L.Q. over the past five years that the agricultural sector has always had the highest value as the most potential sector in Jember Regency, as seen in the following table.

Table 1. Base Sector in Jember Regency area

CATEGORY	DESCRIPTION	LQ						
		2016	2017	2018	2019	2020	Average	Ranking
A	Agriculture	2,486	2,506	2,572	2,580	2,544	2,538	1
B	Mining and Excavation	0,924	0,912	0,945	0,940	0,922	0,929	6
C	Processing Industry	0,714	0,717	0,710	0,706	0,681	0,706	12
D	Procurement of Electricity and Gas	0,168	0,178	0,189	0,194	0,206	0,187	17
E	Water Procurement, Waste Management, Waste and Recycling	0,663	0,646	0,663	0,690	0,680	0,668	13
F	Construction	0,751	0,758	0,769	0,791	0,768	0,767	10
G	Large Trade, Retail, Car and Motorcycle Repair	0,692	0,704	0,721	0,734	0,739	0,718	11
H	Transportation and Warehousing	0,523	0,529	0,536	0,561	0,597	0,549	14
I	Provision of Dining and Drinking Accommodation	0,412	0,418	0,425	0,435	0,416	0,421	16
J	Information and Communication	1,265	1,279	1,301	1,325	1,335	1,301	4
K	Financial Services and Insurance	0,841	0,859	0,869	0,875	0,878	0,865	7
L	Real Estate	0,819	0,833	0,838	0,844	0,838	0,835	8
M, N	Company Services	0,419	0,425	0,428	0,429	0,443	0,429	15
O	Administration of Government, Defense	1,579	1,592	1,639	1,630	1,609	1,610	3
Q	Health Services	1,137	1,157	1,158	1,158	1,172	1,156	5
R, S, T, U	Other Services	0,818	0,819	0,829	0,823	0,828	0,823	9

Source: Processed data, 2021

Moreover, in Politeknik Negeri Jember has also built many teaching factories based on agricultural products,

1. TEFA Coffee and Bakery
2. TEFA Fish Canning
3. TEFA Culinary and Outlet
4. TEFA Bottled Drinks
5. TEFA Seed Center
6. TEFA Smart Green House
7. TEFA Nursery and Cut Flowers
8. TEFA Feed
9. TEFA Coffee Product Processing
10. TEFA Orchid Flower Tissue Culture & Ornamental Plants
11. TEFA Mushroom
12. TEFA Healthy Rice Polije
13. TEFA Agricultural machine tools

The existence of TEFA based on agricultural products in Politeknik Negeri Jember can be an opportunity. It will support initiating a TEFA-based startup of marketing services (Agrimart) in the Department of Agribusiness Management of Politeknik Negeri Jember.

4.2. Aspects of Teaching Factory

Aspects teaching factory is the result of the approach of indicators from empirical studies that have been done before. The results of interviews with Politeknik Negeri Jember stakeholders are Director, Deputy Director, Manager of Agribusiness Management Department (Department Head, Department Secretary, Study Program Coordinator, Laboratory Head), lecturer, and technician. Related aspects required in the planning of teaching plants in the Department of Agribusiness Management include Learning Patterns and Practicums, relationships with industry; Governance Management; Products/Services; Supports H.R.; Supporting Means; and marketing.

Table 2. IFE Analysis

IFE (Internal Factor Evaluation)	Weight	Rating	Score
Strength			
Availability of TEFA startup laboratories	0,14	4	0,56
Entrepreneurship learning simulatively	0,14	3	0,42
Availability of food and agricultural products from TEFA which has been widely established in Polije	0,09	3	0,28
Have a partnership with DUDIKA	0,14	5	0,70
Total Strength Score			1.96
Weakness			
Do not have a laboratory layout according to the industry	0,09	4	0,37
Student practicum is not in accordance with corporate culture	0,14	3	0,42
HR does not yet fully have experience in the industrial world	0,14	5	0,70
There is no marketing and promotion plan.	0,12	2	0,23
Total Weakness Score			1.72
Total IFE			**0.24**

Source: Processed data, 2021

Table 3 EFE Analysis

EFE (External Factor Evaluation)	Weight	Rating	Score
Opportunity			
Leadership support (director) in the formation and development of TEFA	0.16	5	0,79
TEFA management is already organized in Polije governance	0.16	4	0,63
Polije has a SOP/workflow according to industry standards	0,16	3	0,47
Considerable market potential both around Jember Regency and the scope of East Java	0.16	4	0,63
Total Opportunity Score			2,53
Threat			
Relatively cheaper competitor's base price	0,11	4	0,42
The changing flow of new technologies in a very dynamic industry	0,11	3	0,32
Level of public trust in TEFA products	0.16	3	0,47
Total Threat Score			1.21
Total EFE			**1,32**

Source: Processed data, 2021

4.3. SWOT Analysis

SWOT analysis is a management tool used to provide information about strengths, weaknesses, opportunities, and threats in the internal and external Department of Agribusiness Management of Politeknik Negeri Jember. This analysis uses data obtained from the I.F.E. and E.F.E. matrices. The analysis is an advantage using the Penta-helix model, making it easy to formulate a strategy based on a combination of external and internal strength factors from the teaching factory aspect in the Department of Agribusiness Management of Politeknik Negeri Jember. Various alternative planning strategies for the establishment of startup "Agrimart" Department of Agribusiness Management of Politeknik Negeri Jember can later be formulated based on the so (Strenght-Opportunity), S.T. (Strenght-Threat), W.O. (Weakness-Opportunity), and W.T. (Weakness-Threat) models.

Table 4. SWOT Analysis

Internal / External	Strenght (S)	Weakness (W)
	Availability of TEFA startup laboratories	Suitability of laboratory layout with industry
	Learning methods applied	The qualified practicum with corporate culture
	Product availability	HR experience in the industrial world
	Have a partnership with DUDIKA	There is no marketing and promotion plan.
Opportunity (O)	**S-O Strategy**	**W-O Strategy**
Leadership support (Director) in the establishment of TEFA TEFA governance in Polije There is an SOP/workflow in Polije Considerable market potential	- Optimization of TEFA startup facilities and infrastructure - Optimization of learning methods adapted to DUDIKA - Improved quality of TEFA products	- Improving the quality of HUMAN RESOURCES - Identify marketing mix
Threat (T)	**S-T Strategy**	**W-T Strategy**
Competitor's base price Technological developments in the industry Consumer loyalty	- Strengthening cooperation with DUDIKA	- Increased technological innovation and according to corporate culture - Increased partnership cooperation

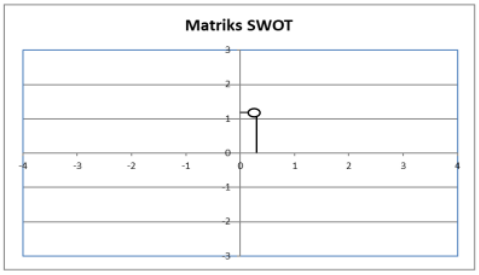

Figure 1 SWOT Matrix

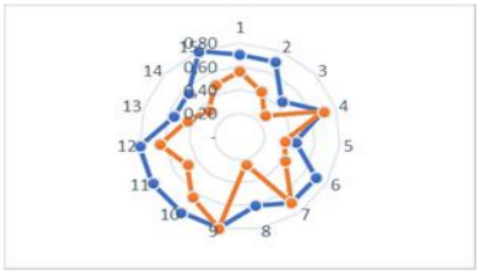

Figure 2 Spider web graphic

The pioneering TEFA has a reasonably high opportunity and strength. Its position is in Quadrant 1 (AGGRESSIVE), which is at the point obtained from the values IFE 0.23 and EFE 1.32. This situation is very favorable so that the strategy that can be applied is to support aggressive growth policies (growth-oriented strategy).

5. CONCLUSION

Based on the results and discussions in the study, it can be concluded that the agricultural sector is the most potential sector in the Jember Regency area. The condition of the territorial-based potential can be used as the basis for the preparation of the teaching factory concept in the Department of Agribusiness Management of Politeknik Negeri Jember.

Pioneering TEFA in the Department of Agribusiness Management has a reasonably high opportunity and strength. This situation is very favorable so that the strategy that can be applied is to support aggressive growth policies *(growth-oriented strategy)*.

Teaching *factory planning* in the Department of Agribusiness Management of Politeknik Negeri Jember based on aspects: learning, relationship with industry, governance management, products/services, H.R. Teaching *Factory,* supporting facilities, and *marketing*.

The findings in this study contribute to the concept of masterplan preparation, potential analysis, alternative

strategies, and teaching factory models. The results of the analysis show that several alternative strategies that can be carried out include: (a) Optimizing TEFA startup facilities and infrastructure; (b) Optimization of learning methods adapted to industry; (c) Improving the quality of TEFA products; (d) Strengthening cooperation with industry; (e) Improving the quality of human resources; (f) Identification of the marketing mix; (g) Increasing technological innovation and following corporate culture; and (h) Increasing partnership cooperation.

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REFERENCES

[1] K. Tim and K. Polije, *Teaching Factory Politeknik Negeri Jember*. Jember: Polije Press.

[2] R. Risnawan, "Manajemen Teaching Factory Dalam Upaya Pengembangan Mutu Pembelajaran di SMK," *Media Manaj. Pendidik.*, vol. 2, no. 1, p. 13, 2019, doi: 10.30738/mmp.v2i1.3549.

[3] Silalahi, *As Asas*, Ketiga. Bandung: PT. Refika aditama, 2015.

[4] U. Sumarwan, *Strategi Pemasaran Jasa Pendidikan dalam Meningkatkan Nilai Jual Madrasah*, Kesatu. Bogor: IPB Press, 2015.

[5] J. A. Kemper, P. W. Ballantine, and C. M. Hall, "Sustainability worldviews of marketing academics: A segmentation analysis and implications for professional development," *J. Clean. Prod.*, vol. 271, p. 2020, 2020, doi: 10.1016/j.jclepro.2020.122568.

[6] M. Patiung, "Penyusunan Masterplan Pengembangan Kawasan Agropolitan Kabupaten Probolinggo Tahun 2017," *J. Chem. Inf. Model.*, vol. 53, no. 9, pp. 1689–1699, 2019.

[7] I. Riana, L. Meydianawathi, and N. Wiagustini, "Master Plan UMKM Berbasis Perikanan untuk Meningkatkan Pengolahan Produk Ikan yang Memiliki Nilai Tambah Tinggi," *J. Ekon. Kuantitatif Terap.*, vol. 7, no. 2, p. 44315, 2014, doi: 10.24843/JEKT.2014.v07.i02.p03.

[8] L. M. Irma, Hasanah Nur, "Analisis Potensi Daerah Untuk Pengembangan Teaching Factory Di Smk Kabupaten Barru," vol. 8719, no. 2006, 2019.

[9] U. E. Malika and J. C. Adiwijaya, "Potensi Agribisnis Sapi Perah Di Kabupaten Jember, Jawa Timur," *J. Agribisnis*, vol. 19, no. 2, pp. 155–161, 2018, doi: 10.31849/agr.v19i2.782.

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