



# **Analysis of the Suitability of Potential Regional Leading Sectors and Expertise Competencies of Vocational High Schools in Boalemo District**

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## **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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## **ABSTRACT**

This study aims to analyze the potential of regional excellence in Boalemo Regency and determine the suitability of SMK areas of expertise with the potential of regional leading sectors. This research was conducted in Boalemo Regency, in ten vocational schools spread across 7 sub-districts. The method used in this study is a combination of *sequential explanatory* model with location *quotient* (LQ) data analysis and qualitative data analysis. Based on the analysis of LQ data, it was obtained that the fields of agriculture, forestry and fisheries business have an LQ value of 1.44, wholesale and retail trade; Car and motorcycle repairs with a value of 1.099, and government administration, defense and compulsory social security have an LQ value of 1.01. In the interview, it was found that agriculture, fisheries, animal husbandry and tourism are the leading sectors of the region. In accordance with the leading sectors of the region, there are 11 competencies of expertise. Meanwhile, the competence of expertise that is not in accordance with the leading sectors of the region there are 7 expertise competencies. The competence of expertise in the field of tourism

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businesses such as Tourism Travel Business, Hospitality, Hospitality Accommodation and Fashion Design is in accordance with the leading sector of the region because the tourism sector cannot be measured using LQ analysis but uses interview techniques. The recommended expertise competencies include Plant Breeding and Seeding, Forest Resources Conservation Techniques, Forest Rehabilitation and Relaxation Techniques, Freshwater Fisheries Agribusiness, Online Business and Marketing, Retail and Marine Tourism & Ecotourism.

*Keywords: Top potential; expertise competency.*

## 1. INTRODUCTION

Human resources (HR) are the main capital for the development of the progress of a nation. Without the support of quality human resources, without abundant natural resources (SDA), without capital resources and mature technological developments, there will be no added value contribution. The abundance of human resources, especially capable and highly productive human resources, is the capital for a country to achieve optimal growth and have competitive value compared to other countries [1]. Based on data from BPS Gorontalo Province in August 2021 recorded an open unemployment rate (TPT) of 4.28%, an increase when compared to 2019 it was recorded at only 3.76% and in 2018 it was recorded at 3.70% this shows that there has been an increase in TPT for the last 3 years [2]. Vocational High School (SMK) is a formal educational institution under the Directorate of Professional Development (DitpSMK) which aims to produce graduates who are prepared to have knowledge, skills, and work attitudes in certain fields that meet the needs of the business world and the industrial world (DUDI), and are expected to become entrepreneurs. This is stated in Article 18 of the National Education System Law Number 20 of 2003 (UUSPN) and the interpretation of Article 15 which regulates vocational secondary education, in line with the Long-Term Development Plan of the Ministry of National Education (RPJP Depdiknas) Year 2005 - 2025 SMK will be a symbol of the development of the world of secondary education in my country. Gradually, the ratio of the number of vocational schools to high schools (SMA) will change significantly. Seeing the current condition of Boalemo Regency, tourism is one of the leading sectors, written in Boalemo Regent Regulation number 62 of 2018 concerning tourist village areas in Boalemo Regency it is stated that the tourism sector is a driver of the economy which is one of the leading sectors that is expected to run continuously [3]. In addition to the tourism sector, quoted from hargo.co.id in access on July 27,

2021, the fisheries and marine sectors, as well as the agricultural sector are also the leading potentials of Boalemo Regency. This means that Boalemo Regency should be able to provide quality human resources in order to support the potential of the region [4]. Therefore, the government does not stop developing this sector in order to improve the welfare of its people. One of the efforts to provide superior human resources for the development of regional leading sectors is through the provision of vocational expertise packages that are in accordance with regional leading sectors [5]. Vocational education or vocational education is basically a subsystem of the education system. Vocational education is part of an education system that emphasizes technical competence and personal knowledge, as well as developing leadership with high integrity. Although vocational education cannot be separated from the entire education system, it has several specificities or characteristics that distinguish it from other educational substances, including vocational education that is oriented to train graduates who are ready for work. For this reason, vocational education is positioned to focus on producing graduates [6]. The National Education System Law (UUSPN) No. 20 of 2003 article 15 states that vocational education is secondary education that prepares students ready to work in certain fields. Vocational education is education that connects, unites, trains humans to have work habits to be able to enter and develop in the world of work, so as to improve their lives [7]. The leading sector is a driver or as the backbone of the economy. The leading sector of the economy is a sector that has high resilience and capability so that it can be used as a fulcrum of hope for economic development, so that it can also be referred to as the main sector or economic leader sector of a region. The role of the leading sector is increasingly strategic, because it is a sector that is able to make a meaningful contribution to foreign exchange receipts. Regional potential is the ability to utilize and develop an area to generate economic value in supporting the

survival of the surrounding community. The potential that exists in an area can be in the form of natural resource potential, socio-cultural potential, human resource potential which if utilized and developed will provide benefits to humans. To produce economic value in the potential in this field must be accompanied by the quality of Human Resources, especially vocational graduates who are skilled and have the ability to manage it.

## 2. METHODS

The type of research used in this study is a combination method of sequential explanatory model with location quotient (LQ) data analysis and qualitative data analysis. Sequential explanatory is a sequential or serial combination

method, with the first method using quantitative and the second method using qualitative as supporting quantitative data, with the weight of both methods being the same [8]. This research is expected to describe the relevance of vocational education to the superior potential of the region.

## 3. RESULTS AND DISCUSSION

Look at Table 1, based on the GDP of Boalemo Regency obtained from the central statistics agency of Boalemo Regency [9] and the GRDP of Gorontalo Province obtained from the central statistics agency of Gorontalo Province [8] the results of the calculation of LQ values are obtained as follows:

**Table 1. Calculation of the LQ value based on the GRDP of Boalemo Regency by business fie**

No.	field of business	Gross regional domestic product at constant 2010 prices by business field (million rupiah) 2021		
		Boalemo Regency	Gorontalo Province	LQ value
1	agriculture, forestry, and fisheries	1884729,31	10665332,44	1,441900754
2	mining and excavation	15868,57	339340,56	0,381559966
3	manufacturing industry	67090,35	1235678,34	0,443011913
4	water supply, waste, and recycling management	1240,87	18101,77	0,559327309
5	electricity and gas procurement	826,09	25665,73	0,262624069
6	construction	219696,38	3097656,56	0,578695916
7	wholesale and retail trade: repair of cars and motorcycles	463632,64	3439371,61	1,099906282
8	transport and warehousing	83873,98	1578037,96	0,433681191
9	provision of accommodation and food and beverages	48174,31	685962,79	0,573027846
10	Information and communication	64791,62	1029695,27	0,513417778
11	financial services and insurance	85187,56	1380460,31	0,503515722
12	Real estate	45982,03	543502,42	0,690315206
13	company services	1801,93	25162,79	0,584305406
14	defense government administration and mandatory social security	255195,31	2076805,96	1,002622736
15	education services	141308,13	1360662,75	0,847378489
16	health services and social activities	141868,65	1161371,65	0,996726482
17	other services	46370,2	447147,25	0,846153561
	GRDP	3567637,91	29109956,18	

Table 1 which is the leading sector or its LQ value is more than one, among others, the first is the agriculture, forestry and fisheries business field with an LQ value of 1.44. Second is wholesale and retail trade; Car and motorcycle repair with a value of 1,099. Third is government administration, defense and compulsory social security with a value of 1.01. Based on the results of the interview, it was stated that the agricultural sector is a leading sector in all sub-districts in Boalemo Regency. The livestock sector is only found in Mananggu District, Wonosari District and Paguyaman District. The fisheries sector is found in Mananggu District, Botumoito District, Tilamuta District, Dulupi

District, Paguyaman District and Paguyaman Pantai District. The tourism sector is located in Botumoito District only. In conclusion, in Boalemo Regency there are only four potential leading sectors, namely the agricultural sector, livestock sector, fisheries sector and tourism sector. The following is a table of the leading sectors of Boalemo Regency based on the results of interviews.

Based on the results of interviews with all informants in Boalemo Regency, there are a total of 22 skill competencies spread across 10 vocational schools, for more details, consider Table 3.

**Table 2. Potential Leading Sectors of Boalemo Regency based on the result of the review**

No.	Regency	potential leading sectors
1	Mananggu	agriculture fisheries livestock
2	Botumoito	agriculture fisheries tourism
3	Tilamuta	agriculture fisheries
4	Dulupi	agriculture fisheries
5	Wonosari	agriculture livestock
6	Paguyaman	agriculture fisheries livestock
7	Paguyaman Pantai	agriculture fisheries

**Table 3. Expertise competencies of SMKs in Boalemo Regency**

No	School Name	Skills/competence
1	SMKN 1 Mananggu	fishing boat Nautica brackish water and marine fisheries agribusiness fishery product processing agribusiness
2	SMKN Botumoito	travel and tourism business hospitality
3	SMKN 1 Boalemo	building modelling and information design electrical power installation engineering computer network engineering office automation and governance accounting and financial institutions hospitality accommodation
4	SMKN 1 Dulupi	agribusiness crops, food, and horticulture poultry livestock agribusiness ruminant livestock agribusiness
5	SMKN 1 Wonosari	poultry livestock agribusiness ruminant livestock agribusiness agribusiness crops, food, and horticulture

No	School Name	Skills/competence
6	SMKN 2 Wonosari	computer network engineering building modelling and information design accounting and financial institutions poultry livestock agribusiness agribusiness crops, food, and horticulture
7	SMKN 1 Paguyaman	poultry livestock agribusiness agribusiness crops, food, and horticulture livestock product processing agribusiness mechanical engineering couture
8	SMKN 2 Paguyaman	accounting and financial institutions computer network engineering accounting and financial institutions light vehicle engineering software engineering
9	SMKN 3 Paguyaman	motorbike business engineering agribusiness crops, food, and horticulture poultry livestock agribusiness
10	SMKN 1 Paguyaman Pantai	office management and business services seaweed agribusiness fishery product processing agribusiness computer network engineering

**Table 4. Conformity of potential leading sectors and expertise competencies of vocational schools based on the results of bps processed data and interview data results**

No.	Skills/competence	Business Field	Leading Sector			
			BPS Data		Interview Data	
			Yes	No	Yes	No
1	agribusiness crops, food, and horticulture	Agriculture	√		√	
2	livestock product processing agribusiness	Agriculture	√		√	
3	poultry livestock agribusiness	Livestock	√		√	
4	ruminant livestock agribusiness	Livestock	√		√	
5	fishing boat Nautica	Fishery	√		√	
6	brackish water and marine fisheries agribusiness	Fishery	√		√	
7	fishery product processing agribusiness	Fishery	√		√	
8	travel business	Tourism	-	-	√	
9	hospitality	Tourism	-	-	√	
10	building modelling and information design	Construction		√		√
11	electrical power installation engineering	electricity and gas procurement		√		√
12	computer network engineering	information and communication		√		√

No.	Skills/competence	Business Field	Leading Sector			
			BPS Data		Interview Data	
			Yes	No	Yes	No
13	office automation and governance	company services		√		√
14	accounting and financial institutions	accounting and financial institutions		√		√
15	hospitality accommodation	Tourism	-	-	√	
16	machinery engineering	car and motorcycle repair	√			√
17	couture	Tourism	-	-	√	
18	light vehicle engineering	car and motorcycle repair	√			√
19	Software Engineering	Information and Communication		√		√
20	motorbike business engineering	car and motorcycle repair	√			√
21	office management and business services	company services		√		√
22	seaweed agribusiness	Fishery	√		√	

Table 3 is the result of interview data obtained by researchers, from the table there are several competencies of expertise that are the same between one school and another. From Table 3 there are differences in data with the existing Provincial Education Office, the difference is in the competence of accounting expertise at SMK Negeri 1 Mananggu and the competence of fisheries agribusiness expertise at SMK Negeri 1 Paguyaman Pantai. Meanwhile, in Table 3 based on findings in the field there is no competence of these skills.

Table 4 shows that there are eleven expertise competencies that are in accordance with the potential of the regional leading sector of Boalemo Regency but some are not appropriate. As for the competence of expertise in the field of tourism, it cannot be determined through BPS data that has been processed, because tourism is not included in the GRDP business field. Competencies that are in accordance with the potential of regional leading sectors include Food Crop and Horticulture Business Agribusiness, Agricultural Product Processing Agribusiness, Poultry Agribusiness, Ruminant Livestock Agribusiness, Fishing Vessel Nautka, Brackish Water and Sea Fisheries Agribusiness, Fisheries Product Processing Agribusiness, Mechanical

Engineering, Light Vehicle Engineering, Motorcycle Business Engineering and Seaweed Agribusiness. Expertise competencies that are in accordance with the leading sectors based on the results of the interview there are twelve expertise competencies including Food Crop and Horticulture Agribusiness, Agricultural Product Processing Agribusiness, Poultry Agribusiness, Ruminant Livestock Agribusiness, Fishing Vessel Nautical, Brackish Water and Sea Fisheries Agribusiness, Fisheries Product Processing Agribusiness, Tourism Travel Business, Hospitality, Hospitality Accommodation, Fashion and Seaweed Agribusiness pay attention Table 4.

Table 4 expertise competencies with two YES answers are expertise competencies that are in accordance with regional leading sectors. These expertise competencies include Food Crop and Horticulture Agribusiness, Agricultural Product Processing Agribusiness, Poultry Agribusiness, Ruminant Livestock Agribusiness, Fishing Vessel Nautical, Brackish Water and Sea Fisheries Agribusiness (APAPL), Seaweed Agribusiness, and Fisheries Product Processing Agribusiness. While the competence of expertise in the field of tourism businesses such as Tourism Travel Business, Hospitality, Hospitality Accommodation

and Fashion Design is in accordance with the leading regional sector or is considered to have two YES answers, because the tourism sector cannot be measured using LQ analysis but uses interview techniques.

There are also ability competencies with one YES reply, including Mechanical Engineering, Light Vehicle Engineering and Motorcycle Business Engineering. Conversely, the competence of abilities with 2 replies does not include Building Modeling and Information Design, Electric Power Installation Engineering, Computer Network Engineering, Office Automation and Governance, Accounting and Financial Institutions, Software Engineering and Office Management and Business Services.

Expertise Competency with two YES answers means that it is a skill competency that must be opened and needs to be improved in quality. Skill competence with one answer YA means that it can be opened but it is necessary to limit the number of students. As for skill competencies with two answers, they are not expertise competencies that need to be issued or replaced. Andi, Nurlaela and Sunardi [10] in conditions of vocational learning development, the region has the authority to ensure the policy of developing Vocational High School (SMK) learning programs that are suitable for regional conditions. High school learning programs can be shown to create activity power or energy base of productive people and able to use the economic capabilities of the region as a result in a long time to increase regional independence. The function of SMK is associated with the provision of regional economic driving force, where SMK is required to be able to open a wider horizon of thinking for the workforce of SMK graduates, so that graduates can develop regional potential in producing and marketing goods and services. This ability is important, especially in order to expand employment opportunities and business opportunities, so that SMK graduates not only depend on existing job opportunities, but are able to develop potential job opportunities by utilizing the existing regional economic potential [11-13].

#### 4. CONCLUSIONS AND SUGGESTIONS

The conclusions obtained from the results of this study include the following:

1. The regional leading sectors in Boalemo Regency based on the research results are four sectors, including: (1) Agriculture,

forestry, and fisheries; (2) Wholesale and retail trade, car and motorcycle repairs; (3) Government administration defense and mandatory social security; and (4) Tourism.

2. Looking at the regional leading sectors in Boalemo Regency, there are 11 (eleven) skill competencies that are in accordance with the leading sectors. These skill competencies include, among others, Food Crop Agribusiness and Horticulture, Agribusiness of Agricultural Product Processing, Poultry Agribusiness, Ruminant Agribusiness, Fishing Vessel Nautics, Brackish Water and Marine Fisheries Agribusiness, Fisheries Product Processing Agribusiness. Travel, Hospitality, Hospitality Accommodation and Fashion Management. The recommended skill competencies include Plant Breeding and Seeding, Forest Resources Conservation Engineering, Forest Rehabilitation and Relaxation Engineering, Freshwater Fisheries Agribusiness, Online Business and Marketing, Retail and Marine Tourism & Ecotourism.

Based on the research findings with all its limitations, several recommendations can be made for skill competencies that can be considered by schools and education offices. These skill competencies include Plant Breeding and Seeding, Forest Resource Conservation Techniques, Forest Rehabilitation and Relaxation Techniques, Freshwater Fisheries Agribusiness, Online Business and Marketing, Retail, Social Care, Caregiver and Marine Tourism & Ecotourism.

#### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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