

# SYNERGY OF QUADRUPLE HELIX IN THE DEVELOPMENT OF SMALL INDUSTRIES PROCESSING FISHERIES IN BANJAR DISTRICT

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**Abstract:** This study aims to identify the strengths, weaknesses, opportunities and threats faced by small-scale fisheries processing industries in Banjar Regency to determine development strategies and determine policy recommendations related to quadruple helix synergies in the development of small fisheries product processing industries in Banjar Regency. This research was carried out in Banjar District where the focus was on small industry surveys resulting from the processing of fishery products in Banjar Regency as well as conducting interviews with related parties namely government and private institutions and universities. To determine the development strategy, SWOT analysis is used while policy recommendations are based on the functions of each party on the quadruple helix. The results showed that based on the SWOT analysis, small-scale industrial processing of fishery products in Banjar Regency was in quadrant III where the strategy that must be used was turn around by re-fixing the internal side. Each party included in the quadruple helix must maximize its duties and functions for the development of small fisheries product processing industries in Banjar Regency.

**Index Terms:** Quadruple helix, small industry processing fishery products

## 1. INTRODUCTION

South Kalimantan is one of the provinces in Indonesia. South Kalimantan is the oldest province on the island of Borneo. This province is located on the island of Borneo where there are four other provinces, so that the number of provinces on the island of Borneo there are five provinces. Kalimantan Island is one of the largest islands in Indonesia. South Kalimantan Province consists of 13 (thirteen) districts and cities.

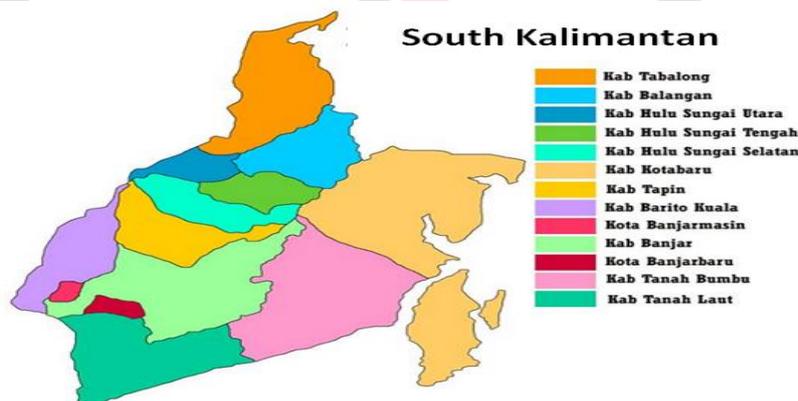


Figure 1 Districts and Cities on Kalimantan Island

South Kalimantan is a province that is rich in natural products, namely mining products (coal, petroleum, gold, diamonds, iron ore), forest products (timber, rattan), agricultural products (rice, fruits, vegetables) and fishery products (freshwater and saltwater fish). The Province of South Kalimantan has areas such as land (highlands and lowlands), swamp areas and coastal areas. Most areas in the Province of South Kalimantan are swamp areas. One of the districts that has a vast swamp area is Banjar Regency.



Figure 2 Map of Banjar Regency

Banjar Regency is divided into 19 (nineteen) sub-districts namely Aluh-aluh, BeruntungBaru, Gambut, KertakHanyar, TatahMakmur, Sungai Tabuk, Martapura, MartapuraTimur, Martapura Barat, Astambul, KarangIntan, Aranio, Sungai Pinang, Paramasan, Pengaron , SambungMakmur, Mataraman, SimpangEmpat and TelagaBauntung. Banjar Regency is bordered by Banjarmasin City, Banjarbaru City, Tanah Laut Regency, Tanah Bumbu Regency, Kotabaru Regency, Tapin Regency and South Hulu Sungai Regency. So that Banjar Regency has a large area.

With the transmigration program and the increasingly open access to inter-island transportation and between cities in Indonesia, the population in the Banjar Regency has increased from 2010-2017. Based on data from the Central Bureau of Statistics, the population in Banjar Regency in 2010 was 509,091 people, while in 2017 the population in Banjar Regency was 571,573 people.

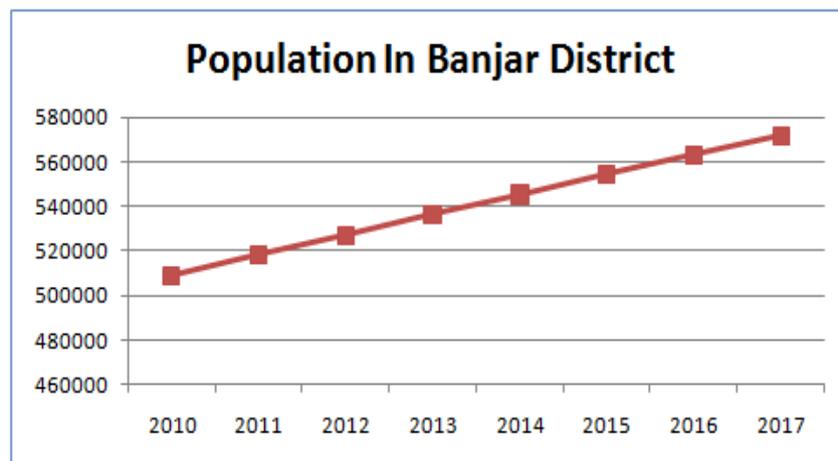


Figure 3 Total Population in Banjar Regency in 2010-2017

The highest population according to data from the Central Bureau of Statistics is in the district of Martapura which is the capital of Banjar Regency, which is 115,828 people, while the TelagaBauntung sub-district has the lowest population of 3,491 people.

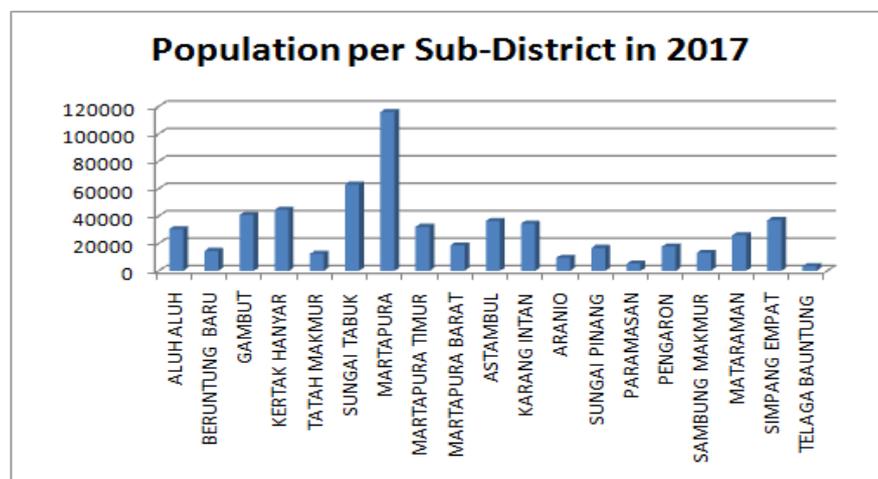


Figure 4. Population Per District in Banjar Regency in 2017

The number of villages / kelurahan in Banjar Regency is 290, the most of which are in the KarangIntan sub-district and Martapura sub-district as many as 26 villages. While the least are Paramasan sub-district and TelagaBauntung sub-district as many as 4 villages / kelurahan respectively. Here are the distribution of the number of villages in each sub-district in Banjar Regency.

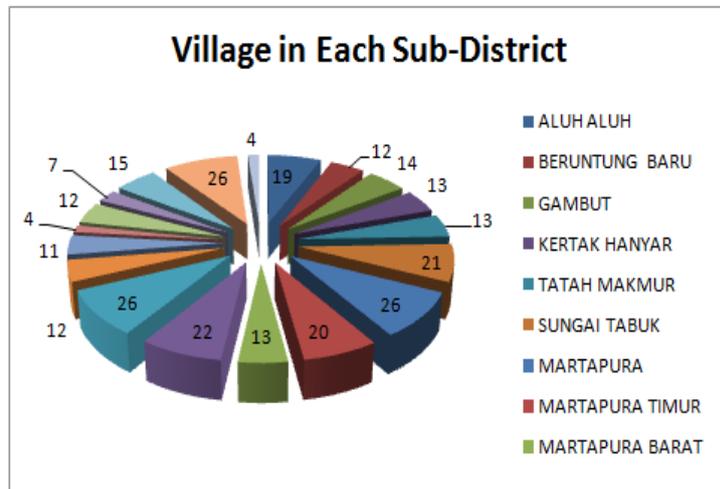


Figure 5. Number of Villages in each Sub-District in Banjar Regency

Because of the relatively large number of villages / kelurahan, various industries are growing in Banjar Regency. The type of industry based on data from the Central Statistics Agency is the largest are MSMEs (Micro, Small and Medium Enterprises).

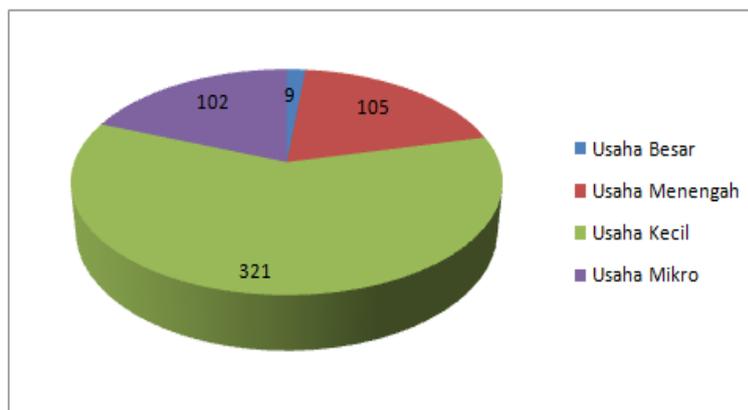


Figure 6. Number of Types of Business in Banjar Regency

The large number of MSMEs in Banjar Regency makes the sector absorb labor. Based on data from the Central Bureau of Home Industry, it is the largest absorber of labor. The MSME sector, especially Home Industry, is a savior by absorbing many workers, especially in the charcoal, non-metal excavation and food, beverage and tobacco industries.

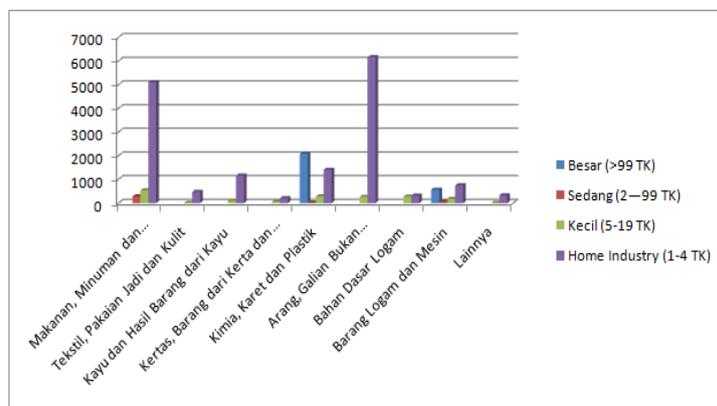


Figure 7 Absorption of Labor

Banjar Regency, which has swamps and coastal areas near the coast, has the potential of one of them being from fisheries. So that fisheries become a superior one that can absorb labor related to the food and beverage sector. Various fisheries products, either freshwater or marine fisheries can provide added value for the progress of Banjar Regency. The ability to foster creativity and increase innovation in creative industry players is needed to be able to grow and compete [1]. To get strong reasons related to this matter, research related to all parties is needed, both local government, private sector, the role of universities and small entrepreneurs themselves where all parties are related to the quadruple helix concept. In this study, we will examine how quadruple helix synergy in the development of small industries processing fisheries products in Banjar Regency.

## II. RESEARCH PURPOSES

This research aims to :

1. Identify the strengths, weaknesses, opportunities and threats faced by the small-scale fisheries product processing industry in Banjar Regency to determine the development strategy
2. Determine policy recommendations related to quadruple helix synergies in the development of small fisheries product processing industries in Banjar Regency

## III. LITERATURE REVIEW

### QUADRUPLE HELIX

Quadruple Helix is the concept of developing Triple Helix which is an integration of academics, entrepreneurs, government and civil society in activities based on creativity and knowledge [1]. Quadruple Helix Innovation Theory which is a collaboration of four sectors, namely the government, business, academics and civil society who have a role in encouraging the growth of innovation. Whereas Triple Helix is a field that is able to move the community to increase creativity, ideas and skills [2]. Models from Quadruple Helix state that the importance of policies and practices of government, universities, and industries can interact with each other in a smart, efficient and effective way [3]. The quadruple helix concept can produce creativity and ability in innovation that requires the participation of governments, academics, entrepreneurs and the public [2]. Innovation is at the forefront of creating a country's competitiveness and economic growth. The creator of this innovation began to be known as the helix concept. The Helix concept is based on the idea that innovation is an interactive result involving various types of actors [5].

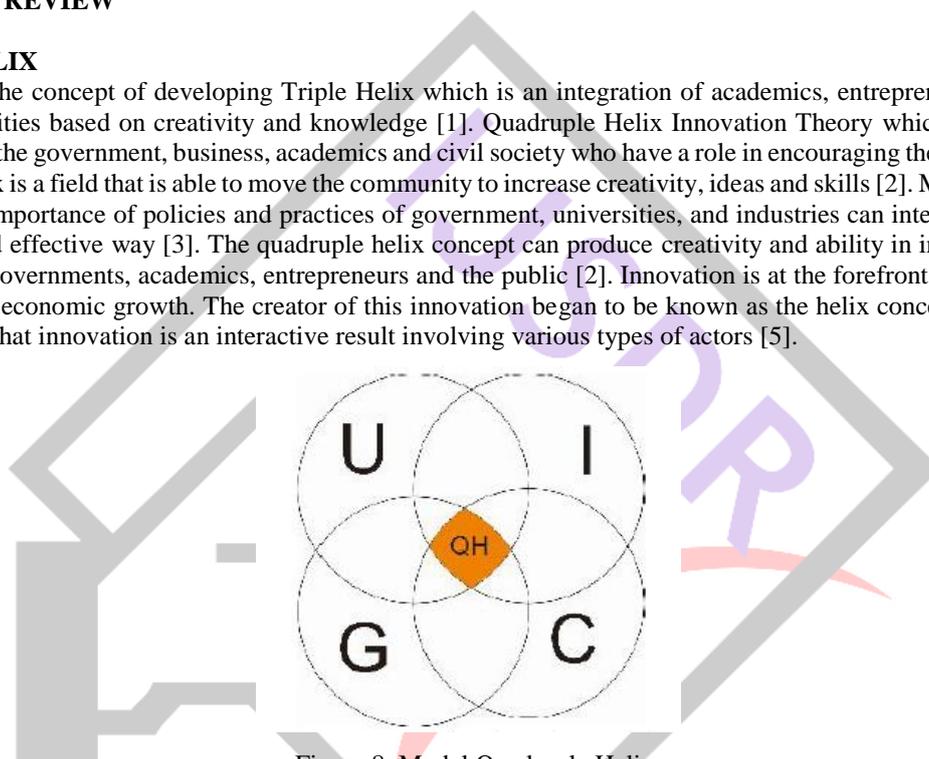


Figure 8. Model Quadruple Helix

In another view about Quadruple Helix is the contextualization of Triple Helix by adding helix civil society and the media and culture-based public. It is an understanding of additional perspectives to be able to understand innovation in the 21st century, then the existence of democracy that can frame and change the conditions of innovation, so Triple helix is not sensitive enough to get additional democracy, on the contrary from Quadruple Helix [4].

The Quadruple Helix model is a framework that is conceptually a collaboration of universities, industries, governments and communities, each of which has a role and identity. The university as a researcher, the government as a policy maker, industry as a producer and society as an adjustment between the gaps that occur from the three parties. The four parties are differentiated based on their goals to be able to increase innovation and face competitiveness [5].

The performance of businesses that have excellence in the creative industry is to produce a blend of creative power that is very good in money supported by contributions and interactions that are very good among universities, businesses, governments and civil society in the Quadruple Helix model. Performance of innovation requires an open-minded character and the attitude to be able to share knowledge that is of a continuous nature so that it can lead to the creativity of new products as well as new services, which have advantages and competitive power [6].

The QH model is a model of innovation that reflects many things from some features in general in thinking that is new to the innovation process and policy in innovation [7]. While the policy in innovation itself is faced with many pressures to be able to change, including those originating from developments externally and internally. There is a national response to various challenges in structural renewal and policy behavior from innovation, then reforms that have consequences both locally and regionally. The existence of a trend in overall development is a policy model of innovation that is dominant based on the presence of linear views and more focus on policies than high technology that are driven by the presence of encouragement and supply. Which can be improved and equipped with a new and broader approach than the previous one. This is called by some opinions that there is a new

approach as a form of policy based on broader innovation. Culture has a positive relationship with a commitment to innovation openly, which also relates to the QH innovation model openly. This relationship is moderated by a commitment to open innovation [8].

## SWOT ANALYSIS

SWOT analysis is a tool that can be used to strategically compile factors in an organization [9]. Usually this SWOT analysis is used in the form of a matrix called the SWOT Matrix, where the SWOT matrix will be able to describe strength or stress, weakness or Weakness, opportunity or Opportunity and threat or Threat, which is usually faced by an organization. Furthermore, SWOT Analysis can formulate the strategy of the organization or company which will then produce what are the possibilities of several alternative corporate strategies.



Figure 9. SWOT Analysis

## II. RESEARCH METHODS

### OBJECT RESEARCH

This research was carried out in Banjar District where the focus was on small industry surveys resulting from the processing of fishery products in Banjar Regency as well as conducting interviews with related parties namely government and private institutions and universities.

### III. ANALYSIS METHOD

#### SWOT ANALYSIS

SWOT analysis includes analysis based on situations that occur in an industry that include strengths, weaknesses, opportunities, and threats. Strengths and weaknesses of an industry based on its internal conditions. While opportunities and threats are based on the external situation of the company [10]. Determination of strategies in the SWOT analysis based on the calculation of the external strategy factor matrix (EFAS) and internal strategy factor matrix calculation (IFAS). The stages of calculating EFAS and IFAS matrices first stage determine the weight of each factor with a range of 0 (not important) to 1 (very important) with the total number of weights equal to 1. The second stage scales each factor with a value of 1 (very low), 2 (low), 3 (good), 4 (very good). The third stage multiplies multiplying factor weights by a factor scale. The fourth stage sums up all the multiplications in the third stage. The fifth stage sets aside the amount that has been calculated in the fourth stage between strengths or strengths with weaknesses or weaknesses, then also excludes the amount calculated in the fourth stage between opportunities or opportunities with threats or threats [11].

The geographical location of Banjar Regency is very strategic, namely:

1. located along the trans Kalimantan road
2. buffer of the provincial capital, Banjarmasin City
3. close to the provincial government office center, Banjarbaru City
4. close to the airport Syamsudin Noor

The spread of the population, which was only concentrated in MartapuraSubdistrict, made the sub-district the densest district. The types of industries that are included in the home industry category are the largest absorber of labor in Banjar Regency which is an added value that needs attention. Home industry or home industry is an industry that absorbs between 1-4 workers per industry. Usually the labor absorbed is close family and managed in a family manner. Even so, home industries have high economic potential in Banjar Regency which generally produces creative products, food drinks and so on.

Household industry processing fisheries products has a considerable business opportunity to develop in Banjar Regency which has a strategic geographical location. The strength is based on the results of the analysis, namely:

1. local content
2. adequate means of transportation and communication
3. geographical strategic position
4. large regional government support
5. business experience and open market potential

Some weaknesses identified by researchers are:

1. issues of capital, management and administration
2. low quality standards and network marketing

Opportunities for home industries in Banjar Regency are:

1. population in adjacent cities and districts
2. Banjar Regency as an investment destination, tourist destination and alternative shelter
3. Establishment of a shopping center

Based on the results of research the threats that arise include:

1. The entry of imported goods commodities
2. National level competition
3. Fluctuations in the availability of raw materials

On the basis of strengths, weaknesses, opportunities and threats possessed by home industries processing fishery products in Banjar Regency can still develop and have the potential to enable it to be advanced supported by the presence of local content. Besides that, the geographical location of Banjar Regency also has a positive impact on the development of the home industry. Although there are some weaknesses related to management and capital, based on the results of calculations with the SWOT analysis, the results of the position of the household industry are found in quadrant III. Based on these results, the home industry must implement a turn around strategy with a focus on improving internal problems and capital problems. Improvement of internal factors is related to improving employee skills through training, improving administration and better management of management.

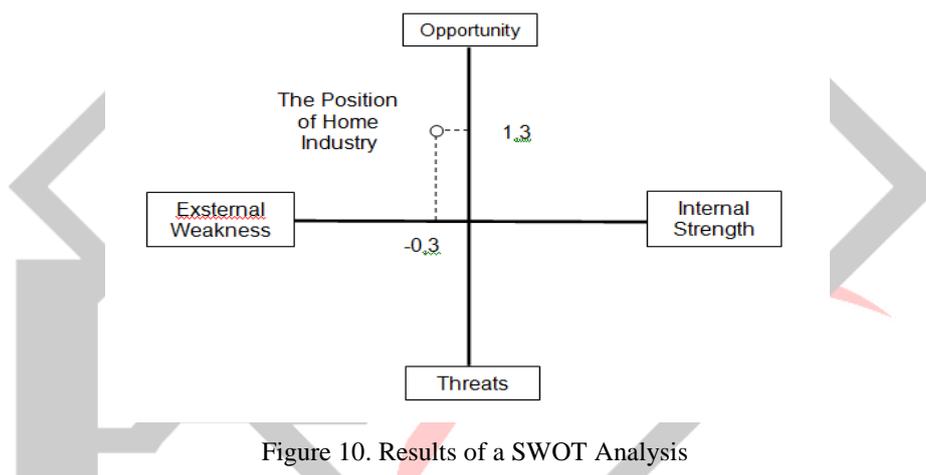


Figure 10. Results of a SWOT Analysis

**THE ROLE OF THE QUADRUPLE HELIX**

The role of the quadruple helix in the development of small industries in Banjar Regency can be illustrated by the following scheme:

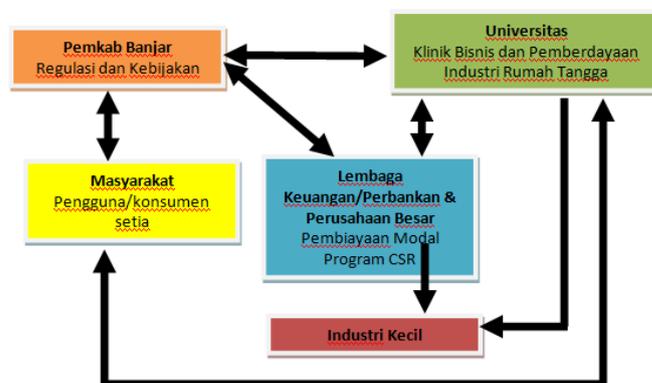


Figure 11. Quadruple Helix Role Scheme

The local government in this case the Regional Government of Banjar Regency has a role as a regulator that determines policies that are expected to facilitate and help access mediation of small industries to universities / universities as well as to large companies

and banking financial institutions. All SKPDs in Banjar Regency have programs related to the progress of small industries, only need a policy direction to be directed to small industries in the fisheries sector. In the preparation of the Regional Budget, the Regional Government of Banjar Regency is also expected to support the development of small fisheries industries.

The role of universities in the development of small industries in the field of fisheries in the Regency of Banjar can be realized in the higher education tridharma program both in the fields of teaching, research and community service. So far in South Kalimantan and especially in Banjar Regency the role of universities to advance small industries in the fisheries sector has been carried out, one of which is by providing business clinics and empowerment in small fisheries industries through business incubator institutions that help provide training in small fisheries industries starting from the marketing side, finance, human resources and production.

The industry in this case large companies and banking financial institutions also have a large share in the development of small fisheries industries in Banjar Regency. The classic problem faced by small industries in the fisheries sector, which is related to capital, can be answered with the help of financial and banking institutions which are expected to provide facilities related to small-scale fisheries industries. Through regulations made by local governments as guarantor for small-scale fisheries industries to facilitate access to the world of financial institutions and banks to overcome capital problems. Large companies including mining companies spread in Banjar Regency are expected to be serious in managing their CSR programs, hoping to provide added value to the development of small fisheries industries in Banjar Regency, both in terms of capital by making fostered partners or providing training and guidance in collaboration with the college.

The community also has a big contribution in the development of small fisheries industries in Banjar Regency. Processed products from small-scale fisheries industries in Banjar Regency that have local content, which are various processed from fragrant and pangasius fish, are expected to be absorbed or purchased by the people in South Kalimantan and the Indonesian people and not consume imported products. The typical product from South Kalimantan is AmplangIkan, with raw materials from typical freshwater fish giving different flavors with similar products in other regions. Another product that has local content is salted sepat fish, where this product is one of the souvenir products for tourists or widely consumed by the people of the island of Borneo. All of these products, if made from typical derivative products, are then packaged and marketed well following the development of information technology so that the community as consumers will be loyal to always be customers of processed products from small-scale fisheries in Banjar Regency.

#### IV.CONCLUSION

1. Strategies that can be used for the development of small fisheries industries in Banjar Regency are related to SWOT analysis where the position is quadrant III with a strategy of turning around paying more attention to internal conditions including local content as a strength for export products and utilizing opportunities where Banjar Regency is a tourist destination in the Province of South Kalimantan. The weakness of capital, management and administration problems can be overcome by the existence of quadruple helix synergy.
2. Quadruple helix synergy in the development of small fisheries industries in Banjar Regency is very much needed in connection with the results of the SWOT analysis which requires a turn around strategy by taking into account the internal conditions of small fisheries industries in Banjar Regency. Local governments must provide policies, rules that encourage the advancement of small-scale fisheries industries in Banjar Regency, universities through various incubation centers for MSMEs must also remain a place to train so that small-scale fisheries industries in the Banjar Regency are increasingly developing. The private sector, namely large companies and financial and banking institutions with policies and rules set by local governments can solve capital problems through various forms of loans and CSR mechanisms. The last is the participation of the community as consumers should remain loyal to the products produced by small fisheries industries in Banjar Regency so that they continue to provide benefits that will have an impact on progress and more employment

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