



Eni Yulinda &lt;eni.yulinda@lecturer.unri.ac.id&gt;

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**ISFM 15-16 September 2021**

1 pesan

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**isfm faperika** <isfm.faperika@ict.unri.ac.id>  
Bcc: eni.yulinda@lecturer.unri.ac.id

13 September 2021 pukul 15.24

Dear ISFM X 2021 Participants,

We are gladly to invite you to the Main Event and Parallel Session of ISFM X 2021. Please find below the zoom meeting link for 15 and 16 September 2021.

September 15, 2021

ISFM Committee is inviting you to a scheduled Zoom meeting.

Topic: International &amp; National Seminar of Fisheries and Marine Science X 2021

Time: Sep 15, 2021 08:00 AM Jakarta

Join Zoom Meeting

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Topic: Parallel Session of ISFM X 2021

Time: Sep 16, 2021 09:00 AM Jakarta

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We also attached the virtual background which can be used during our coference. For parallel session, please find attached the schedule and room for each participants. Thank you for your participation.

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## Parallel Session September 15, 2021

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**isfm faperika** <isfm.faperika@ict.unri.ac.id>  
Bcc: eni.yulinda@lecturer.unri.ac.id

15 September 2021 pukul 13.11

Dear presenter of ISFM X 2021,  
We are using the same zoom meeting link as this morning event. We are going to break out the room and presenter can join their room according to the schedule provided.

Join Zoom Meeting

<https://zoom.us/j/99479891146?pwd=MkMwUjZpeWE0YUtvUIJucFYyVTFxUT09>

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4 pesan

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**isfm faperika** <isfm.faperika@ict.unri.ac.id>  
Kepada: Eni Yulinda <eni.yulinda@lecturer.unri.ac.id>

27 September 2021 pukul 15.56

Dear Mr/Mrs **Corresponding Author**,

Thank you for your participation in The 10<sup>th</sup> International and National Seminar on Fisheries and Marine Science (ISFM X), which was held **online** on **September 15-16, 2020 by ZOOM**.


Please kindly find the reviewer's comments in the attachment and you should revise the manuscript based on the comments.

Please submit the revised manuscript by **October 5, 2021 via this Email**. We will assume that you resign as a participant in IOP Publication if you do not submit the revised version on the date mentioned. In order to publish the paper, the manuscript must be written based on **the guideline template**. We are looking forward to your response. Thank you

Kind Regards,

ISFM X Committee

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**Eni Yulinda** <eni.yulinda@lecturer.unri.ac.id>  
Kepada: isfm faperika <isfm.faperika@ict.unri.ac.id>

28 September 2021 pukul 23.58

Dear  
Committee of ISFM X

We hereby resubmit articles that have been corrected following the reviewer's directions (see attachment). Thanks very much.

Eni Yulinda  
[Kutipan teks disembunyikan]

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**Eni Yulinda** <eni.yulinda@lecturer.unri.ac.id>  
Kepada: Clara Yolandika <clarayolandika@lecturer.unri.ac.id>

28 September 2021 pukul 23.59

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29 September 2021 pukul 08.56

Well received with thanks.

[Kutipan teks disembunyikan]

## REVIEWER COMMENTS AND FEEDBACKS

Title	:	<b>The Effect of Trust on the Fishing Industry Supply Chain Performance in Rokan Hilir Regency Riau Province, Indonesia</b>
Author	:	

Comments:

No	Items	Comments and Feedback
1	Abstract	The authors is required what are the content of an abstract. It contains in brief; introduction, background, goals, methodology, result and conclusion.
2	The use of IOP proceeding template	Most are already follow the template given, but some need to be checked again, especially in the indentation, paragraph and line spacing (See comments in the returned article).
3	English proficiency in general	It is recommended that the author write the manuscript in proper English or with a help of proofreader.
4	Background	The background content is sufficient. However, the way of writing and the English needs to be improved.
5	Materials and Methods	Please refer to text for comments/suggestions
6	Results and Discussion	Please refer to text for comments/suggestions

### General recommendation:

The article can be published directly without any revision

The article can be published directly with minor revision

The article can be published directly with major revision

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The article can not be published

# The Effect of Trust on the Fishing Industry Supply Chain Performance in Rokan Hilir Regency Riau Province, Indonesia

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**Abstract.** This ~~survey~~ research was conducted in August-October 2020 in Rokan Hilir Regency, the largest central of the fishing industry in Riau Province, Indonesia. The research objective is to analyse the effect of trust on the fishing industry supply chain performance in the regency. Respondents were set 270 fishing companies based on the Slovin formula. They were taken purposively in four fishing centres, namely Panipahan (Pasar Limau Kapas district), Bagansiapiapi (Bangko), Kubu Babussalam, and Sinaboi. Collecting data using a closed questionnaire, containing a number of statements measured by a 7-point Likert scale. The data collected includes trust (credibility, top management capability, and government support), and supply chain performance (smooth of goods flow, financial flow, and information flow). Data analysed using the Structural Equation Modeling-Partial Least Square (SEM-PLS) method with the help of SmartPLS 3.3 software. The results showed that the trust has a positive and significant effect on the fishing industry performance in Rokan Hilir. This happens because the relationship between fellow entities of fishing industry supply chain occurs based on trust. The relationship between fishing companies (fisherman) and *tauke* (fish collectors, agents, and exporters) is based on patron-client ties, while the relationship between fellow *tauke* is based on family/blood ties. Both types of relationships have existed for years.

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**Keywords:** Fish distribution, fisherman, fishing business, patron-client

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## 1. Introduction

Rokan Hilir Regency is the largest centre of the fishing industry in Riau Province, Indonesia. There are 945 fishing companies, 2,208 fishing-boats, and 2,208 fishermen operating in the regency [1]. Its marine fish production is 45.80 tons per year, or 42.47% of the total fish production of Riau [2]. Half of the fish production is marketed to the outside Riau Province, and exported to Malaysia. The fish market is carried out by *tauke*, namely collectors, agents and exporters of fish [3]. *Tauke* comes from Chinese, because almost all collectors, agents and exporters are Indonesian citizens of Chinese descent. *Tauke* always maintain the stability of fish production, in order to meet the fish supply to local and overseas consumers. Moreover, fish production is highly dependent on the season: in fish season, production is abundant, while in non-fish season, production is very scarce.

The fish production stability is very necessary to ensure the fishing industry supply chain performance, namely the smooth of goods flow, money flow, and information flow. In this regard, the role of entities involved in the supply chain system is very important. The entities are fishermen (fishing companies), and fish *tauke*. The relationship between them is very strong, but there are differences in the pattern of relationships between the *tauke*-fisherman, and fellow *tauke*. According to [4], the *tauke*-fisherman relationship is known as a patron-client relationship. *Tauke* as a patron, lends money without collateral to fishermen for fishing operational costs, and guarantees their daily household needs. Fishermen as clients, sell all their fish to the *tauke* at a price set by the *tauke*. The fishermen did not mind, and remained loyal to selling their fish to the *tauke*. Meanwhile, a strong relationship between fellow *tauke* occurs because of family ties/blood ties.

In the patron-client relationship and blood ties relationship in Rokan Hilir, there is a mutual trust between them. Trust is the willingness to take risks [5], and the expectation that buyers and sellers will act according to the agreed commitments [6]. Trust is considered as the basis for a strategic partnership between sellers and buyers [7]. The extent to which this trust factor affects the fishing industry supply chain performance in Rokan Hilir is not known for certain. Based on these reasons, it is necessary to conduct in-depth research. This study aims to analyse the effect of trust on the fishing industry supply

chain performance in the regency. The hypotheses proposed in this study is trust has a significant impact on the fishing industry supply chain performance (H<sub>1</sub>), as shown in Figure 1.

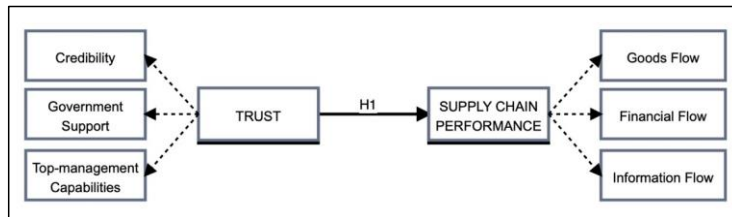


Figure 1. Research framework

## 2. Research methods

### 2.1. Population and respondents

The study was designed using a survey method. Respondents were determined to be 270 of the 945 population of the fishing companies in Rokan Hilir using Solvins's formula [8]. They were taken purposive-proportionally in four sample points, namely Panipahan/Pasir Limau Kapas 98 respondents, Bagansiapiapi/Bangko (86), Sinaboi (74), and Kubu Babussalam (12) as shown in Figure 2.



Figure 2. Research site map [9]

### 2.2. Collecting data methods

Data were collected using closed questionnaires distributed to respondents [10]. There are two types of data collected, primary data and secondary data. The primary data covers trust (consist of credibility, government support, and top-management capabilities); and supply chain performance (consist of goods flow, financial flow, and information flow). Meanwhile, secondary data was obtained from books and other written documentation published by related institutions/agencies.

### 2.3. Statistical analysis

The data analysis was carried out in two stages: the instrument testing, and the hypotheses testing. The SPSS (Statistical Package for Social Science) software version 25.0, was used for instrument testing [11]. While the hypotheses testing was used the SEM-PLS (Structural Equation Modeling - Partial Least Square) method with the SmartPLS version 3.2.8 software [12]. PLS analysis is carried out in

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two stages, namely the Evaluation of the Measurement Model (External Model), and the Structural Model Evaluation (Inner Model). The external model is used to obtain the validity and reliability of the research construct, while the inner model is used to answer the hypotheses. Hypotheses testing of the bootstrap procedure was used to obtain the t-statistic value for each path relationship. Furthermore, the t-statistic value was compared with the t-table value using a 95% confidence level ( $\alpha = 0.05$ ). If the  $t\text{-statistic} > t\text{-table}$ , the hypothesis is accepted, and vice versa [13].

### 3. Results and Discussion

#### 3.1. Descriptive information

A total of 270 respondents return the questionnaire (100%), but only 234 questionnaires whose data could be processed. Meanwhile, 36 questionnaires were not used because they were incompletely filled. The other 36 questionnaires, the data declared outliers. Validity and reliability test results of the data showed that the t-statistic value is 1 ( $> t\text{-table } 0.1194$ ), and the Cronbach's Alpha is 0.898 ( $> 0.6$ ). Thus, according to [14] opinion, all statements in the questionnaire are declared valid and reliable, so that subsequent analysis can be carried out.

#### 3.2. Evaluation of measurement model (outer model)

The evaluation of the measurement model aims to ensure that each indicator that describes the construct-variable (latent) is valid [15]. The analysis result shows that the loading factor value of trust are 0.752 (government support), 0.896 (top-management capabilities), and 0.896 (credibility). All of these values are  $> 0.7$ , as illustrated in Figure 3.

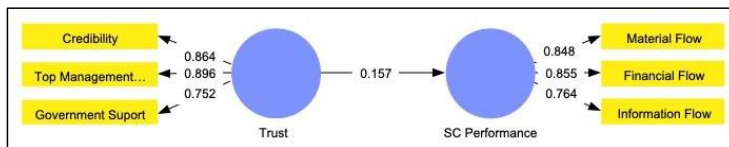


Figure 3. Model PLS Algorithm

According to Syahrir et al. (2020), if the loading factor value  $> 0.7$  means the indicator can reflect the latent variable. Therefore, all indicators can reflect their respective latent variables significantly, so that they can be used as model estimators.

#### 3.3. Evaluation of structural model (inner model)

Evaluation of the structural model is done by looking at the coefficient of determination ( $R^2$ ), t-statistic, and P-value. The  $R^2$  value is needed to measure how much the dependent variable (endogen construct) can explain the independent variable (exogen construct). The model is declared strong if the  $R^2$  value is 0.75, moderate (0.50), and weak (0.25). Meanwhile, t-statistic and P-value were used to test the hypothesis. The hypothesis is accepted if the  $t\text{-statistic} > t\text{-table}$  and  $P\text{-value} > 0.05$  [17]. The results of the determination coefficient test show that the  $R^2$  value of trust is 0.428, and the supply chain performance is 0.551, as shown in Table 1. This means that the trust variable is moderate enough to explain performance.

Table 1. Coefficient of determination ( $R^2$ )

Variables	R Square	R Square Adjusted
Trust	0.428	0.424
Performance	0.551	0.546

Furthermore, the results of bootstrapping analysis show that the t-statistic value of trust is 2.729, and P-value is 0.007, as shown in Table 2.

**Table 2.** Output of PLS-SEM bootstrapping analysis

Hypotheses	Hypotheses Form	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T-Statistics (O/STDEV)	P-Values	Decicion (Effect)
H <sub>1</sub>	Trust → Performance	0.157	0.156	0.057	2.729	0.007	(+) Significant

Table 2 show that the t-statistic value is >1.96, and the P-value <0.05. According to [16], if the t-statistic value is > 1.96, and the P value is < 0.05, it means that the independent variable has a positive and significant effect on the dependent variable. Thus, in this study, trust has a positive and significant effect on the fishing industry supply chain performance in Rokan Hilir Regency.

This shows that the role of trust is very dominant in influencing the fishing industry supply chain performance in the area. In a *tauke*-fisherman relationship, the *tauke* believes that the fishermen will sell their fish to them. They are not worried that the fishermen who are their partners, will sell them to other parties. Take also believes that fishermen will not lie in terms of weighing fish when unloading fish at the landing sites. This happened because the *tauke* felt that he had helped fishermen through patron-client relationships. Tauke believes that if fishermen do not fulfill their commitments, the fishermen themselves will lose. Likewise, fishermen feel confident that the *tauke* will not dare to violate their commitments, because if this happens, the fishermen will sell their fish to other parties. This is in accordance with the opinion [18], that the mutual trust that occurs between the *tauke* and fishermen in Rokan Hilir is very close and difficult to disrupt. This is because, their relationship has lasted hundreds of years.

It is also happening in the relationship between fellow *tauke*. They will still trust each other because of their family/blood ties. They believe that if they violate commitments, will suffer economic and social losses at the same time. According to [4], trust based on family/blood tie relationships is much stronger than relationships based on economic factors.

#### 4. Conclusions

The results of the study conclude that the trust has a positive and significant effect on the fishing industry supply chain performance in Rokan Hilir Regency, Riau. This occurs because there is a unique relationship between the entities (stakeholders) involved in the supply chain system, namely on fishermen (fishing companies), and *tauke* (collectors, agents, and exporters of fish). The relationship between *tauke*-fishermen is a patron-client relationship, while the relationship between fellow *tauke* is a family/blood tie relationship. Therefore, the government must pay attention to the phenomenon of this relationship, if it wants to foster the performance of the fishery industry supply chain in the area.

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## Supply Chain Analysis of Shrimp's (*Panaeus* sp.) in Bagansiapiapi, Riau Province

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# Supply Chain Analysis of Shrimp's (*Panaeus sp.*) in Bagansiapiapi, Riau Province

E Yulinda<sup>1\*</sup>, H Arief<sup>1</sup> and R Hendri<sup>1</sup>

<sup>1</sup>Departement of Socio-Economic, Faculty of Fisheries and Marine, University of Riau, Pekanbaru, Indonesia

\*Corresponding author: eni\_yulinda@yahoo.co.id

**Abstract.** This survey research was conducted in Bagansiapiapi, Rokan Hilir Regency, Riau Province, Indonesia on February - August 2019. The research objective was to analyze: (1) The parties involved in the supply chain of shrimp (*Panaesius monodon*); (2) Patterns of shrimp flow, money flow, and information flow in the shrimp's supply chain; and (3) The efficiency level of the shrimp's supply chain in fish storage shed of "Mara" (*Bangliau Mara*), Bagansiapiapi. The results showed that, the flow pattern of shrimp products, starts from fishermen to *Bangliau Mara*, agents, retailers, *along-along* and consumers. The pattern of money flow, started from consumers, to retailers, *along-along*, agents, *Bangliau Mara*, and fishermen. While the pattern of information flow, take place both ways (reciprocity) between the entities. The efficiency level of shrimp's supply chain in *Bangliau Mara* at each agent towards the end consumers, mostly efficient.

**Keywords:** *shrimp, Panaesius mangodon, Bagansiapiapi, supply chain*

## 1. Introduction

Bagansiapiapi in Rokan Hilir Regency, is one of the most potential marine fisheries production center in Riau Province. One of the product is shrimp (*Panaeus sp.*). Shrimp production in this area is 1,500 tons per year [1], but the production is influenced by the season. Shrimp also rot easily. Based on these reasons, the shrimp supply chain in Bagansiapiapi must be managed properly.

Supply chain management (SCM) is the managing the flow of goods, information and money, through the network from producers to consumers. With SCM, the flow of goods from from producers to end consumers, will be on time, right cost and right amount [2]. One of the shrimp distribution company in Bagansiapiapi is *CV. Bangliau Mara*.

The application of shrimp's SCM in Bagansiapiapi is important in order to provide economic significance for the region. There are three types of flows that must be managed in a supply chain, namely: (1) the flow of goods that flows from upstream to downstream, (2) financial (money) flows from downstream to upstream, and (3) flow information from upstream to downstream, or vice versa.

Shrimp is one of the reliable fisheries products in Riau Province, because it has a high economic value, so it can increase fishermen's income, as well as providing important significance to the regional economy. But the level of production is very fluctuating and depends on the season. In addition, shrimp is a product that is easy to rot, so it requires special handling during the marketing process. Unstable production levels and the nature of shrimp that easily rot, will affect the shrimp supply chain in the marketing system.



The objective of this study is to analyze the parties involved (entities) in the supply chain of shrimp in *Bangliau Mara*; to analyze the flow patterns of goods, money, and information in the supply chain of shrimp; and to analyze the efficiency level of the shrimp supply chain in *Bangliau Mara*.

## 2. Materials and Methods

This research uses survey methods. The research location is *CV. Bangliau Mara*, Bagansiapiapi, Rokan Hilir Regency, Riau Province. Location was determined purposively. The study was conducted from February to August 2019. The data obtained is processed by several analyzes. To identify the parties involved in the shrimp's supply chain, used descriptive qualitative analysis. The same method is used to study the patterns of shrimp flow, money flow and information flow, which occur in the shrimp's supply chain in *Bangliau Mara*, Bagansiapiapi.

To find out the level of efficiency of shrimp's supply chain, used quantitative analysis. The indicators used to determine marketing efficiency, marketing margins and supply allocation arrangements of shrimp, based on the calculation of costs incurred by marketing institutions.

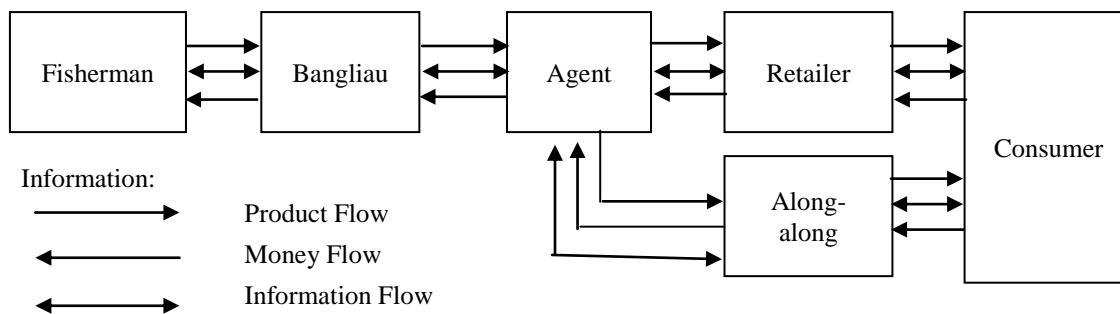
To find out the efficiency level of shrimp marketing at each marketing institution, used formula:  $Eps = BP/HE \times 100\%$ . Eps is Marketing Efficiency, BP is Marketing Costs, and HE is Retail Price. If  $Eps < 5\%$  it means efficient, but  $Eps > 5\%$  it means inefficient.

## 3. Result and Discussion

Supply chain management (SCM) is manage the supply chain of goods, where the goods flow from upstream to downstream as a chain, following a number of parties. Supply chain (SC) is a series of entities consisting of three or more entities (both individuals and groups), that are directly involved from upstream to downstream in the flow of products, services, finance, and information, from sources to customers [2]. The purpose of this SCM is to align customer needs with material flow from suppliers, to get the balance of the goal imbalances that often occur in providing the best service to customers, low inventory management, and low unit costs [3].

The results showed that the parties involved in the shrimp's supply chain in Bagansiapiapi consist of one skipper/ distributor of shrimp (*tauke*); 4 agents (that is agent for Bengkalis, Dumai, Duri, and Kandis); 4 retailers; 4 inter-city retailer (*along-along*); and consumers. The flow of shrimp products in Bagansiapiapi, starts from fishermen to skipper/ distributor of shrimp (*tauke*), agents, retailers, intercity-retailer (*along-along*), and end consumers. Instead, the flow of money, occurs from consumers to intercity-retailers (*along-along*), retailers, agents, and skipper/ distributor of shrimp. The payment process is done in cash.

While the flow of information among entities (fishermen, skipper/ distributor of shrimp (*tauke*), agents, retailers, intercity-retailer (*along-along*), and end consumers. Communication is done by telephone, social media, or face to face. The information content includes the price of shrimp on the market, available shrimp stocks, as well as ways of collecting and shipping shrimp. The flow pattern of shrimp, money and information, can be seen in Figure 1.



**Figure 1.** The flow pattern of product, money and information on the shrimp’s supply chain di Bagansiapiapi

Fishermen get information about the ideal price of shrimp from skipper/ distributor of shrimp. The price of shrimp based on grade. The price of shrimp for grades A and B is IDR 40,000/ kg, and grade C is IDR 15,000/kg. Fishermen trust information about shrimp price from skipper/ distributor. Distributor get information about stock of shrimp from the fishermen.

The efficiency level of shrimp’s supply chain from agent to consumers in Bagansiapiapi, are as follows:

### 3.1 Agent for Bengkalis

There are two marketing channels at the agent for Bengkalis, namely: Channel I (start from Fisherman → Distributor → Agent → Retailers → End Consumers); and Channel II (start from Fisherman →Distributor → Agent → Intercity-retailer (*along-along*) → End Consumers). Table 1 shows the marketing costs for each shrimp marketing agency.

**Table 1.** Marketing Costs at Agent for Bengkalis

Marketing Institute	Shrimp Prices (IDR/kg)	Components of Marketing Costs	Marketing Cost (IDR/kg)	
			Channel I	Channel II
1. <i>Toke/ Bangliau</i>	40,000	Plastic+ice	1,150	1,150
2. Agent	45,000	Shipping costs	1,300	1,300
3. Retailer	50,000	Plastic+ice+retribution	570	
4. Intercity-retailer	55,000	Plastic+ice		1,170
5. Consumers				
- From Retailer	57,000			
- From Intercity-retailer	62,000			
		Total	3,020	3,520

Based on Table 1, that the total marketing costs on Channel 1 is IDR 3,020, and retail price is IDR 57,000. So, the level of marketing efficiency on Channel 1 is:

$$\begin{aligned}
 \text{Eps} &= \text{BP/HE} \times 100\% \\
 &= 3.020/57.000 \times 100\% \\
 &= 5,2\%
 \end{aligned}$$

The results of these calculations show that the level of marketing efficiency is 5.2% > 5%. This means that marketing efficiency is inefficient.

Total marketing costs in marketing Channel II is IDR. 3,520/kg. Then the level of efficiency is;

$$\begin{aligned} \text{EPS} &= \text{BP/HE} \times 100\% \\ &= 3,520/62,000 \times 100\% \\ &= 5.6\% \end{aligned}$$

The results of these calculations show that the level of marketing efficiency is 5.6% > 5%. This means that marketing efficiency is inefficient.

### 3.2 Agent for Dumai

There are two marketing channels at the agent for Dumai, namely: Channel I (start from Fisherman → Toke → Agent → Retailers → End Consumers); and Channel II (start from Fisherman → Distributor → Agent → Intercity-retailer → End Consumers). Table 2 shows the marketing costs for each shrimp marketing agency.

**Table 2.** Marketing Costs at Dumai Agent Level

Marketing Institute	Shrimp Prices (IDR/kg)	Components of Marketing Costs	Marketing Cost (IDR/kg)	
			Channel I	Channel II
1. Distributor	40,000	Plastic+ice	1,150	1,150
2. Agent	43,000	Shipping costs	600	600
3. Retailer	48,000	Plastic+ice+retribution	570	
4. Intercity-retailer	53,000	Plastic+ice		1,070
5. Consumers				
- From Retailer	55,000			
- From Intercity-retailer	60,000			
<b>Total</b>			<b>2,320</b>	<b>2,820</b>

Based on Table 1, that the total marketing costs on Channel 1 is IDR 2,320/kg, and retail price is IDR 55,000. So, the level of marketing efficiency on Channel 1 is:

$$\begin{aligned} \text{Eps} &= \text{BP/HE} \times 100\% \\ &= 2,320/55,000 \times 100\% \\ &= 4.2\% \end{aligned}$$

The results of these calculations show that the level of marketing efficiency is 4.2% > 5%. This means that marketing efficiency is efficient.

Total marketing costs in marketing channel II is IDR 2,830/kg. Then the level of efficiency is;

$$\begin{aligned} \text{EPS} &= \text{BP/HE} \times 100\% \\ &= 2,820/60,000 \times 100\% \\ &= 4.7\% \end{aligned}$$

The results of these calculations show that the level of marketing efficiency is 4.7% > 5%. This means that marketing efficiency is efficient.

### 3.3. Agent for Duri

There are two marketing channels at the agent for Duri, namely: Channel I (start from Fisherman → Distributor → Agent → Retailers → End Consumers); and Channel II (start from Fisherman → Distributor → Agent → Intercity-retailer → End Consumers). Table 3 shows the marketing costs for each shrimp marketing agency.



**Table 3.** Marketing Costs at Duri Agent Level

Marketing Institute	Shrimp Prices (IDR/kg)	Components of Marketing Costs	Marketing Cost (IDR/kg)	
			Channel I	Channe III
1. Distributor	40,000	Plastic+ice	1,150	1,150
2. Agent	43,000	Shipping costs	600	600
3. Retailer	48,000	Plastic+ice+retribution	570	
4. Intercity-retailer	53,000	Plastic+ice		1,070
5. Consumers				
- From Retailer	55,000			
- From Intercity-retailer	60,000			
Total			2,320	2,820

Based on Table 1, that the total marketing costs on Channel 1 is IDR 2,320/kg, and retail price is IDR 55,000. So, the level of marketing efficiency on Channel 1 is:

$$\begin{aligned} \text{Eps} &= \text{BP/HE} \times 100\% \\ &= 2,320/55,000 \times 100\% \\ &= 4.2\% \end{aligned}$$

The results of these calculations show that the level of marketing efficiency is 4.2% > 5%. This means that marketing efficiency is efficient.

Total marketing costs in marketing channel II is IDR 2,830/kg. Then the level of efficiency is;

$$\begin{aligned} \text{EPS} &= \text{BP/HE} \times 100\% \\ &= 2,820/60,000 \times 100\% \\ &= 4.7\% \end{aligned}$$

The results of these calculations show that the level of marketing efficiency is 4.7% > 5%. This means that marketing efficiency is efficient.

### 3.4 Agent for Kandis

There are two marketing channels at the agent for Kandis, namely: Channel I (start from Fisherman → Distributor → Agent → Retailers → End Consumers); and Channel II (start from Fisherman → Distributor → Agent → Intercity-retailer → End Consumers). Table 4 shows the marketing costs for each shrimp marketing agency.

**Table 4.** Marketing Costs at Kandis Agent Level

Marketing Institute	Shrimp Prices (IDR/kg)	Components of Marketing Costs	Marketing Cost (IDR/kg)	
			Channel I	Channel II
1. Distributor	40,000	Plastic+ice	1,150	1,150
2. Agent	43,000	Shipping costs	800	800
3. Retailer	48,000	Plastic+ice+retribution	570	
4. Intercity-retailer	53,000	Plastic+ice		1,070
5. Consumers				
- From Retailer	55,000			
- From Intercity-retailer	60,000			
Total			2,520	3,020

Based on Table 1, that the total marketing costs on Channel 1 is IDR 2,320/kg, and retail price is IDR 55,000. So, the level of marketing efficiency on Channel 1 is:

$$\text{Eps} = \text{BP/HE} \times 100\%$$

$$= 2,520/55,000 \times 100\%$$

$$= 4.5\%$$

The results of these calculations show that the level of marketing efficiency is  $4.5\% > 5\%$ . This means that marketing efficiency is efficient.

Total marketing costs in marketing channel II is IDR 2,830/kg. Then the level of efficiency is;

$$\text{EPS} = \text{BP/HE} \times 100\%$$

$$= 2,020/60.000 \times 100\%$$

$$= 5.3\%$$

The results of these calculations show that the level of marketing efficiency is  $5.3\% > 5\%$ . This means that marketing efficiency is inefficient.

The efficiency level of shrimp's supply chain in *Bangliau Mara* Bagansiapiapi, at each agent to end consumers, is mostly efficient. An efficient shrimp's supply chain is found in agents for region Dumai (4.2%), Duri (4.2%) and Kandis (4.5%). While agent for Bengkalis is inefficient (5.2%). The efficiency level of *along-along* to end consumers in agent for region Dumai 4.7% and Duri 4.7% are efficient. But in Bengkalis (5.6%) and Kandis (5.3%) are inefficient.

In general, the shrimp marketing system in Bagansiapiapi is efficient. This means, the distribution of margins in each marketing institution is quite evenly distributed. According to Alamsyah (2015), longer marketing channels cause marketing costs incurred by merchants to increase and lead to large marketing margins, but inefficient marketing can also occur in short marketing channels if marketing costs are greater.

## 4. Conclusion and Suggestions

### 4.1. Conclusion

This research concludes:

1. Entities involved in shrimp SCM in Bagansiapiapai, are: *toke* (1 person), agents (4 people), retailers (4 people), intercity-retailer (4 people) and end consumers.
2. The pattern of shrimp products flow in Bagansiapiapai is from Fishermen to Distributor, Agents, Retailers/ Intercity-retail (*Along-along*), and consumers. The pattern of of money flow is Consumers to Retailers/ Intercity-retailer (*Along-along*), Agents, Distributor and Fishermen. While the pattern of information flow (such as information about shrimp stok and prices), is recepcocal between entities involved in the shrimp supply chain in Bagansiapiapi.
3. The efficiency level of shrimp's supply chain in Bagansiapiapi, at each agent to end consumers, is mostly efficient.

### 4.2. Suggestion

Inefficient shrimp marketing at Bengkalis Agent level and Along-along (in Bengkalis and Kandis), needs to be reorganized, so that all parties involved in the marketing, obtain an even profit.

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