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

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Abstract. This 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 (Pasir 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.

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 (H₁), 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 Regency 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.

2.2. Collecting data methods
Data were collected using closed questionnaires distributes 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 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-statistic $> t$-table, the hypothesis is accepted, and vice versa [13].

![Figure 2. Research site map [9]](image)

### 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 r-statistic value is 1 (> t-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 Algoritma](image)
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 (endogenous construct) can explain the independent variable (exogenous 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-statistic $> t$-table and P-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.

| 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 is 2.729, and P-value is 0.007, as shown in Table 2.

| Hypotheses | Hypotheses Form | Original Sample Mean (O) | Sample Mean (M) | Standard Deviation (STDEV) | T-Statistics (O/STDEV) | P-Values (Effect) | Decision |
|------------|-----------------|--------------------------|-----------------|---------------------------|------------------------|------------------|----------|
| H1         | Trust $\rightarrow$ 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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