Archives of Business Research – Vol. 9, No.2
Publication Date: February 25, 2021
DOI: 10.14738/abr.92.9683.
Karuntu, M. M., Palandeng, I. D., & Rogi, M. H. (2021). Analysis of the Effect of Supply Chain Management on the Competitiveness of Coastal Fisherman Communities in North Minahasa District. Archives of Business Research, 9(2). 142-192.

Analysis of the Effect of Supply Chain Management on the Competitiveness of Coastal Fisherman Communities in North Minahasa District

Merlyn Mourah Karuntu
Faculty of Economics and Business Sam Ratulangi University

Indrie Debbie Palandeng
Faculty of Economics and Business Sam Ratulangi University

Mirah Helen Rogi
Faculty of Economics and Business Sam Ratulangi University

ABSTRACT

Supply Chain Management is an integrative method or approach to manage the flow of products, information, and money in an integrated manner that involves parties ranging from upstream to downstream consisting of suppliers, factories, distribution networks and logistics services. Supplier is one of the most important links in determining the quality of the product and the speed at which the product reaches the consumer. In the capture fisheries industry in North Sulawesi, the coastal fishing community in North Minahasa Regency is one of the spearheads of the success of the capture fisheries industry supply chain because it functions as a supplier to the fish processing industry in North Sulawesi. The purpose of this study was to analyze the influence of Supply Chain Management, namely the variables of technical and managerial assistance, information sharing, trust, long-term relationships, and process integration on the competitiveness of coastal fishing communities in North Minahasa Regency. This study uses a causal associative research type. The analytical method used is Multiple Linear Regression Analysis. The results showed that technical and managerial assistance, information sharing and trust had a significant effect on the competitiveness of coastal fishing communities in North Minahasa regency, while long-term relationship variables and process integration had no significant effect on the competitiveness of coastal fishing communities in North Minahasa Regency.

Keywords: supply chain management, technical and managerial assistance, information sharing, trust, long-term relationships, process integration, competitiveness

INTRODUCTION

Background

The flow of globalization has brought many changes to the business world. Business actors face many demands and competition. Competition conditions that are getting tighter due to the flow of capital, goods and services as well as free labor into and out of a country have resulted in companies having to strive to provide quality products, responsive to market demands and desires and at competitive prices. Challenges and competition in the business world have resulted in business actors no longer being able to rely on the excellence of company management internally but also having to take into account external networks outside the companies that will supply raw materials, transportation companies and distribution chains that will deliver products to consumers. A good management approach to the existing supply chain will greatly assist the company in the competitive business world.

Supply Chain Management is an approach that can be used to manage the supply chain network of a product. Supply Chain Management is an integrative method or approach to manage the flow of products, information and money in an integrated manner that involves parties from upstream to downstream consisting of suppliers, factories, distribution networks and logistics services (Pujawan, 2005: 22) . According to Guritno and Harsasi (2014: 3) Supply Chain Management in general can be explained as the integration of activities starting from the procurement of goods and services, converting raw materials into in-process and finished goods, and delivering these goods to customers with in an efficient manner.

As the largest maritime country in the world, Indonesia has enormous and diverse natural wealth. Fish resources in Indonesian seas cover 37% of the world's fish species, of which several species have high economic value, such as tuna, shrimp, lobster, reef fish, various types of ornamental fish, shellfish and seaweed. According to Komnas Kajiskan (2016), the sustainable potential of marine fish resources in Indonesia is estimated at 12.54 million tons per year, which are scattered in Indonesian territorial waters and the waters of the Indonesian Exclusive Economic Zone (ZEEI). Of all the potential fish resources, the allowable catch (JTB) is 10.03 million tonnes per year or around 80 percent of the sustainable potential, and only 6.60 million tonnes are utilized in 2017 or only 65.8% of the JTB. , while the total capture fisheries production (at sea and PUD) is 7.07 million tons. The contribution of the fisheries sector to the new country is 7% (Merdeka.com, 30 September 2020).

The classic problem that is often encountered relating to the fisheries sector, especially those related to fishermen, is the competitiveness of fishermen. According to the 2020-2024 Minister of Marine Affairs and Fisheries Advisory Coordinator, Prof. Dr. Ir Rokhmin Dahuri MS, released by republika.co.id (22 October 2020), explained a number of problems and challenges in marine and fisheries development. He stated that most of the capture fisheries business, aquaculture, fishery product processing, and fishery product trading are carried out traditionally and on the scale of Small and Micro Enterprises (SMEs) so that the level of fish resource utilization (SDI), productivity and efficiency of fisheries business in general low.

The size of the capture fisheries business unit (business), aquaculture, fishery product processing, and trade in fishery products mostly does not meet the economy of scale. Most fisheries businesses have not been managed by implementing an Integrated Supply Chain

Management System, which includes the production subsystem, the post-harvest industry and marketing so there is less (no) certainty about selling prices, unstable supply and prices, and business risks. get tall. According to news released by Bisnis.Com on November 11, 2020, the Director General of Strengthening the Competitiveness of Marine and Fishery Products said that the fisheries sector is still facing classic problems that have not been resolved to date. The challenge is how the fisheries sector can provide benefits for all parties.

Even though the problems in the marine and fisheries sector are quite complex, it cannot be denied that this sector has quite a lot to do with the economies of several regions in Indonesia, especially districts / cities that have the marine and fisheries sector as a superior. Likewise, North Minahasa Regency is one of the regencies in North Sulawesi Province which has excellent potential in the marine and fisheries sector. Based on data released by BPS 2020, capture fisheries production in North Minahasa Regency is in the volume of 33,821.08 tons with a value of Rp. 963,900,666.00. North Minahasa is in third place as a contributor to capture fisheries production in North Sulawesi province after Bitung City and Minahasa Regency. The Fishermen Community in North Minahasa District is a supplier to manufacturing companies involved in the supply chain network for the Capture Fisheries Industry.

Every business, especially manufacturing businesses, must be involved in a supply chain. The effectiveness of a supply chain will determine whether the company can be competitive in the market or not so that supply chain management cannot only be done internally but also must take into account the external network outside the company, one of which is the supplier of raw materials or suppliers. According to Pujawan (2005: 7), supply chain management is not only oriented to the internal affairs of the company, but also external matters concerning the relationship with partner companies. According to Pujawan, why coordination and collaboration between companies in the supply chain is needed because companies in the supply chain basically want to satisfy the same end customers so they have to work together to make products that are cheap, deliver them on time, and with good quality.

Competitive advantage is an advantage over competitors obtained by offering lower value or by providing greater benefits because of a higher price (Philip Kotler and Gary Armstrong, 2003). According to Li et al., (2006) competitiveness is defined as the ability of an organization to create a position that can be defended through competition with others. Several dimensions in supply chain management that are considered to affect the competitiveness of suppliers in a supply chain network, namely: technical and managerial assistance to suppliers (Pujawan, 2005: 7), information sharing (Pujawan and Mahendrawati, 2010), trust (Panayides and Lun, 2009)), long-term relationships (Dyer and Singh in Panayides and Lun, 2009) and process integration (Zailani and Rajagopal, 2005).

According to Pujawan (2005: 7) factories need to provide technical and managerial assistance to their suppliers because in the end this will create the ability to compete throughout the supply chain. Meanwhile, Pujawan and Mahendrawati (2010) state that the success of a supply chain is very dependent on the information system, with the information on business partners in the supply chain that can be calculated. Panayides and Lun (2009) state that trust is an important aspect of building mutually beneficial and sustainable relationships in the supply chain. Dyer and Singh in Panayides and Lun (2009) also state that long-term relationships in the supply chain can

help companies to create competitive advantage through supply chain capabilities that are built together with their partners.

Zailani dan Rajagopal (2005), menerangkan bahwa process integration yang efektif dalam supply chain management adalah kunci sukses untuk perusahaan meraih suatu keunggulan bersaing. Industri manufaktur tidak akan banyak berarti apabila suppliernya tidak mampu menghasilkan bahan baku yang berkualitas, murah dan mengirimkannnya tepat waktu dengan jumlah yang sesuai.

By analyzing the influence of Supply Chain Management of the capture fisheries industry on the competitiveness of coastal fishing communities, it will be very helpful in obtaining the right models and strategies for the sustainability of capture fisheries businesses carried out by coastal fishing communities and also for the competitiveness of the overall supply chain, especially the industry capture fisheries in North Minahasa which has a significant contribution to economic growth.

Formulation of the Problem

In connection with the matters mentioned above, the problems in this study are:

1. Does technical and managerial assistance have a significant effect on the competitiveness of coastal fishing communities in North Minahasa District?
2. Does information sharing have a significant effect on the competitiveness of coastal fishing communities in North Minahasa Regency?
3. Does trust have a significant effect on the competitiveness of coastal fishing communities in North Minahasa Regency?
4. Does the long-term relationship have a significant effect on the competitiveness of coastal fishing communities in North Minahasa Regency?
5. Does process integration have a significant effect on the competitiveness of coastal fishing communities in North Minahasa Regency?

LITERATURE REVIEW

Theoretical Review

Supply Chain Management

Pujawan (2005: 22) states that Supply Chain Management (SCM) is an integrative method or approach to manage the flow of products, information and money in an integrated manner that involves parties ranging from upstream to downstream consisting of suppliers, factories, distribution networks and logistic services. According to Guritno and Harsasi (2014: 3) Supply Chain Management in general can be explained as the integration of activities starting with the procurement of goods and services, converting raw materials into in-process and finished goods, and delivering goods. supply chain management to its customers in an efficient manner. Supply chain management is the integration of activities for procurement of materials and services, conversion to semi-finished goods and final products, and delivery to customers (Heizer and Render, 2009).

Simchi-Levi et al in Irmawati (2007) states supply chain management as an approach that is applied to bring together suppliers, entrepreneurs, warehouses, and other storage places

(distributors, retailers, and retailers) efficiently, so that products can be produced and distributed in quantity right, right location, and right time to lower costs and meet customer needs. This definition is based on several things:

a. Supply chain management needs to consider that all activities from suppliers, manufacturers, warehouses, distributors, retailers, to retailers have an impact on the cost of products manufactured according to customer needs
b. The purpose of supply chain management is to make the total cost of all parts, starting from the transportation and distribution of raw materials, in-process goods, and finished goods, to be more effective and efficient, thereby reducing costs.
c. Supply chain management revolves around the efficient integration of suppliers, manufacturers, warehouses, distributors, retailers and retailers covering all company activities, from strategic level to operational tactic level.

In a supply chain, there are usually three types of flows that must be managed: 1. Flow of goods / materials flowing from upstream to downstream; 2. The flow of money / financial, which flows from downstream to upstream; 3. Information flow, which flows from upstream to downstream or vice versa.

Indrajit and Richardus (2003) state that activities in supply chain management include traditional purchasing functions plus other activities that are important for the relationship between suppliers and distributors. According to Heizer and Reinder (2004) supply chain management can include the determination of carriers, credit and cash transfers, suppliers, distributors and banks, accounts payable, warehousing, fulfillment of orders, sharing information about demand forecasts, production and inventory control activities. According to Indrajit and Djokopranoto (2009: 3) Supply Chain Management is a system in which organizations distribute their production goods and services to their customers. This chain is also a network of various organizations that are interconnected and have the same goal, namely as best as possible to carry out the procurement or goods, the term supply chain also includes the process of changing these goods, for example from raw goods to finished goods.

Major Players in Supply Chain Management

According to Indrajit and Djokopranoto (2006: 6 - 8), supply chain consists of several main players who are companies that have the same interests, namely:

a. Suppliers
b. Manufacturer
c. Distribution
d. Retail Outlets
e. Customers

Chain 1: Suppliers

The network begins with suppliers, who are the sources that provide the first ingredients. The supply chain will start from this section. This first material can be raw materials, raw materials, auxiliary materials, merchandise, subassemblies, spare parts, and so on. This first source is where suppliers.

In its pure meaning, this includes suppliers or sub-suppliers. The number of suppliers may be large or small, but suppliers are often numerous. This is the first link in the chain.

Chain 1 – 2: Suppliers -> Manufacturer

The first chain is connected to the second chain, namely the manufacturer or plaints or assembler or fabricator or other form that has the job of making, fabricating, assembling, assembling, converting, or finishing goods (finishing). These various forms are referred to as manufacture. The link with the first link already has the potential to make savings. For example, inventories of raw materials, semi-finished materials, and finished materials on the side of suppliers, manufacturers, and transit points are targets for this savings. In this chain, savings of 40% - 60% are not uncommon, and even more can be obtained from inventory carrying costs. For example, by using the supplier partnering concept, these savings can be obtained.

Chain 1 – 2 – 3: Suppliers -> Manufacturer -> Distribution

The finished goods produced by the manufacturer must be distributed to customers. Although there are many ways to distribute goods to customers, most of which are through distributors and are usually taken by most supply chains. Goods from the factory through the factory warehouse are distributed to the warehouse of distributors or wholesalers or wholesalers in large quantities, and in due time the wholesalers distribute smaller amounts to retailers.

Chain 1 – 2 – 3 – 4 : Suppliers -> Manufacturer -> Distribution -> Retail Outlets

Wholesalers usually have their own warehouse facilities or can rent from other parties. The warehouse owned is used to store goods before they are distributed again to the retailer. Here there is an opportunity to obtain savings in the form of total inventory and warehouse costs, by redesigning the delivery patterns, starting from the manufacturer's warehouse or retail outlets. Although there are several factories that directly sell their products to customers, there are not many of them and most of them use a pattern like the one above.

Chain 1 – 2 – 3 – 4 – 5: Suppliers -> Manufacturer -> Distribution -> Retail Outlets > Customers

These retailers or retailers then offer the goods directly to the customers or buyers or users of the goods. Which includes outlets are shops, warungs, convenience stores, supermarkets, malls, and so on, which are the final buyers. outlet) to real customers or real users. This is because buyers are not necessarily real users. The supply chain only actually stops after the goods in question arrive at the direct user (actual user) of the goods or services.

The concept of Supply Chain Management emphasizes how an organization / company meets consumer demand by creating added value efficiently and effectively by collaborating with parties by managing the flow of goods, money and information to fulfill demand more quickly with the right quantity so that in the end will improve the overall performance of the supply chain (Anatan and Ellitan, 2008: 98). According to (Pujawan, 2005) the main objective of Supply Chain Management is to produce products that are cheaper, on time, and of quality to achieve company goals. Chopra and Meindl (2007: 6) state that the purpose of the supply chain is to maximize the overall value generated.

One of the important aspects in the supply chain is the integration and coordination of all activities that occur in the chain, a decision that is taken will directly affect the entire supply

chain. A company must manage the supply chain as one entity. With the achievement of coordination of the company's supply chain, in each channel of the supply chain the company will not experience a shortage of goods nor will there be too many excess goods.

According to Rangkuti (2004: 57), Supply chain management will be effective if:

a) Suppliers and customers work together by sharing and communicating information with each other.
b) Suppliers and customers have the same goal
c) There is trust between suppliers and customers.
d) Suppliers and customers need to participate together in designing the supply chain to achieve the stated goals and facilitate communication and information flow.

Technical and Managerial Assistance

According to Pujawan (2005: 7) factories need to provide technical and managerial assistance to their suppliers because in the end this will create the ability to compete throughout the supply chain. According to the Big Indonesian Language Dictionary (KBBI) in Lektor.id states that the meaning of technical assistance is capital assistance, experts and so on from abroad to launch the businesses of a developing country. Meanwhile, managerial assistance, when viewed from the meaning of the word managerial, according to the Big Indonesian Dictionary (KBBI) in litel.id, the meaning of the word managerial is relating to managers. This means that it can be said that managerial assistance is assistance related to business management.

Information Sharing

Information sharing is the intensity and capacity of companies in their interactions to share information with partners regarding joint business strategies (Simatupang and Sridharan, 2008). Information sharing also allows supply chain members to obtain, maintain and convey the information needed to ensure effective decision making and is a factor that can strengthen the elements of collaboration as a whole, therefore industrial bottlenecks can be reduced by sharing information (Yaqoub, 2012).

According to Chopra and Meindl (in Pujawan and Mahendrawathi, 2010) information must have several characteristics in order to be useful in making supply chain decisions:

a. Be accurate. In order to make good decisions, information must be true and reliable.
b. Right. Consider what information is appropriate and needed by the company.
c. Can be accessed when needed. To be used when needed, information must be accessible properly and correctly, so that it can assist in making decisions.

The success of the supply chain is very dependent on the information system, with the information on business partners in the supply chain that can be calculated (Pujawan and Mahendrawathi, 2010). Lack of coordination of the parties involved in the supply chain will cause distortion of information called the bullwhip effect phenomenon (Parwati and Andrianto, 2009). Meanwhile, the Bullwhip Effect itself is defined by Pujawan (2005: 210) as an increase in fluctuation or variability of demand from downstream to upstream of a supply chain.

Handfield and Nicholas in Susilo (2008) state that inaccurate information or distorted information at each level of the supply chain from the bottom up can cause several important problems, including:

1) Excessive supplies
2) Loss of income
3) Decreased level of customer satisfaction
4) Ineffective delivery
5) Error in production scheduling
6) Inefficient use of resources

Information sharing is used to provide benefits to all elements involved in supply chain management and long-term benefits to all parties involved in the supply chain through information sharing. Therefore the importance of sharing information between parties in a supply chain by using information technology must be increased to reduce uncertainty and improve the company in terms of raw material delivery and ultimately improve the performance of the company's Supply Chain Management.

Trust

Trust in a cooperative relationship has the meaning of company belief, that the partner will take actions that bring the company to a certain advantage, and vice versa, instead of doing something that is detrimental to the company (James C. Anderson & James A. Narus, 1990, p. 45) . According to Doney & Cannon (1997, p.40), trust in suppliers is able to form a good cooperative relationship between customers and suppliers and is the key to maintaining this cooperative relationship.

Trust is a party's belief that the other party will fulfill its promise (Moore, 1998). An important aspect of this definition is the statement that trust is the belief or expectation of a trusted partner as a result of the partner's expertise and reliability. This is in line with the opinion of Doney and Cannon (1997, p. 36) which states that trust arises as a result of partner reliability and integrity which is shown through various attitudes such as consistency, competence, fairness, responsibility, helpfulness and concern.

One of the most important things for each company to have in a supply chain network is trust between organizations (Chopra and Meindl, 2007). Trust is an important factor in building a supply chain management because trust reduces uncertainty. In a negotiation, trust plays a role as a way to create a strong relationship between the company and partners. In addition, trust also makes a relationship stable which helps reduce transaction costs (Sahay, 2003).

According to Donni Juni (2017, p.116) Trust is the assessment of a person's relationship with other people who will carry out certain transactions in accordance with expectations in an environment full of uncertainty. According to Donni Juni (2017, p.118) trust is built on a number of characteristics. The various characteristics relating to belief are as follows:

1. **Maintaining Relationships**
   A confident consumer will always maintain a good relationship between himself and the company because he realizes that a good relationship will have a beneficial impact on him.

2. **Receiving Influence**
   Consumers who have high trust will be easily influenced so that the company's / marketing costs for marketing programs become cheaper.
3. **Open in Communication**
   Consumers who have high trust in the company will provide constructive information for the company so that the flow of information is not choked up.
4. **Reducing Supervision**
   Consumers who believe usually rarely criticize so that he reduces his supervisory function of the company / marketer.
5. **Patience**
   Believing consumers will have more patience than ordinary consumers.
6. **Providing Defense**
   Consumers who believe in defending the company / marketer when the product they consume is criticized by competitors or other users.
7. **Giving Positive Information**
   Trusting consumers will always provide positive and constructive information for the company.
8. **Accepting Risk**
   A believing consumer will accept any risk when he decides to use a product produced by the company.
9. **Convenience**
   Consumers who believe in making purchases repeatedly because they believe that the company / marketer gives them convenience to consume products in the short and long term.
10. **Satisfaction**
    Consumers who believe will be easier to give satisfaction than consumers who do not believe.

Long Term Relationship

Long-term relationships are perceptions of the mutual dependence of buyers on suppliers, both in the context of products or relationships that are expected to bring benefits to buyers in the long term (Ariani, 2013). Building long-term relationships can generate benefits including market access and reliable market information. By building long-term relationships with suppliers, buyers and sellers can achieve cost savings through:

1) Reduction of search costs and evaluation costs
2) Reduction of transaction fees
3) The influence of knowledge and the relationship of global economies of scale.

The advantage of long-term relationships is that suppliers better understand consumer desires, exchange information, have mutually beneficial relationships between producers and suppliers in providing raw materials and plan strategies to produce strength that can be used as long-term competitive advantage.

The relationship between suppliers, customers and the company must be well managed and always improved so that there is a sustainable relationship in which suppliers are responsible for the quality of the products produced by the company. This relationship must be supported by the

existence of trust given to suppliers in order to achieve efficiency in company performance so as to be able to create products that can meet consumer wants and needs. Trust is the main key in building a long-term relationship. Without trust, a relationship based on commitment will not be created. Commitment is defined as the belief of one party that building a relationship with another party is important and affects the optimal benefits for both parties.

In principle, long-term relationships have the ultimate goal of managing the company in order to gain profitability through continuous and mutually beneficial relationships so as to create a consistent and sustainable long-term relationship. Some of the main advantages of a long-term collaborative relationship include, among others, that the same supplier in the long run will better understand consumer desires, jointly formulated planning and exchange of business information will encourage compatibility in subsequent planning and jointly planned strategies will produce strength that can used as a competitive advantage in the long term (Ariani, 2013).

The company's relationship with suppliers is the strongest collaboration in the context of the value chain or supply chain. In this case, the supplier has a role to provide the materials or input materials used by the company. The quality of the materials and the ability to distribute these materials depend on the performance of the suppliers which in turn have an effect on the overall performance of the company.

Ganesan in Indriani (2006) defines a long-term relationship as a perception of the interdependence of buyers on suppliers, either in the context of products or relationships that are expected to bring benefits to buyers in the long term. Some of the main advantages of a long-term collaborative relationship include: the same supplier in the long run will understand more about consumer wants, jointly formulated planning and exchange of business information will encourage compatibility in subsequent planning and jointly planned strategies will produce strength that can be used. used as a competitive advantage in the long term (Ellram and Zineldin in Bujang, 2007).

While the indicators shown in the long-term relationship come from Morgan and Hunt (1994, p.35) and Hewett and Bearden (2001, p. 63), namely

1. Commitment to mutual benefit is a cooperation agreement to carry out a long-term relationship.
2. Maintenance of relationships are efforts made in an effort to maintain the relationship between buyers and sellers.
3. The same goal is defined as the same direction of thought so that long-term relationships can be built.

Process Integration

Integration is a combination of various activities to form a whole, integration can improve relationships in each value chain can also facilitate decision making and enable value chain creation. There are several stages to achieve an integrated supply chain management system. The development from logistics management to supply chain management consists of several stages (Indrajit and Djokropranoto, 2012):

1) Stage 1: Baseline

At this stage the production function and logistics function are still carrying out separate and separate activities. The production department does not think about the existing inventory, lack of inventory or excessive inventory because the production department is only in charge of producing a product in accordance with predetermined quality standards.

2) Stage 2: Functional Integration (Functional Integration)

Combining functions that have almost the same activity or adjacent functions, begins to be considered at this stage, because in this case the process integration is already being considered.

3) Stage 3: Internal Integration (Internal Integration)

All functions involved in an organization or company are an internal integration process for planning frameworks and monitoring.

4) Integration Externally (External Integration)

It is the final stage and the actual stage of Supply Chain Integration, because this stage continues from the planning and supervision stages (Internal Integration), namely upstream (upstreams) and downstream (downstreams), to customers.

The company's supply chain integration pattern reflects the company's operational focus in competing in the business world. In carrying out the integration of the company is faced with a choice of which direction the supply chain integration pattern is, whether it is internal or external (towards suppliers, consumers, or both (Setiawan and Santoso, 2006). Four types of integration were introduced by Noord (quoted by Becker et al. And Hamidin, Surendro 2010), namely:

1. Physical integration, refers to changes in processes and activities to improve and efficiency of core processes.
2. Information integration, refers to the exchange of information relating to inventory levels, transportation / manufacturing planning, forecasting, process actual status and so on.
3. Integration of coordination, refers to the alignment of decision-making processes along the supply chain.
4. Integration of supply chain design, refers to cooperation in changes to the supply chain structure.

Using previous research by Frohlich and Westbrook (2001) as a reference, integration is operated on the basis of 8 different types of activities that are generally used by a company to integrate the company's operations with its suppliers and consumers.

1. **Access to the planning system.**
   This integrative variable aims to determine whether or not there is access to suppliers and consumers in the company's planning system, because operational planning and control is the key to moving an organization or supply chain in the desired direction (Stock and Lambert, 2001). This joint planning will have a significant impact on the success of a supply chain.
2. **Joint process planning.**
   The structure of the work flow or activity indicates how the company carries out its duties and activities. The level of process integration in the supply chain is a measuring tool for the company's organizational structure (Stock & Lambert, 2001).

3. **Shared EDI (Electronic Data Interchange) access.**
   The use of information technology to coordinate all elements of the supply chain from suppliers to consumers can achieve a level of integration called competitive advantage, which is not present in traditional logistics systems (Hill & Scudder, 2002; James, 2004). Because EDI in business in Indonesia is not well known, the term is replaced by the use of shared information technology.
4. **Knowledge of Inventory Mix Level.**
   Reduced inventory reduces the need for warehousing. Companies need to store goods, especially finished goods in a proportional amount, because finished goods inventory costs more than semi-finished goods. Rationalizing the supply chain network will have implications for a decrease in inventory for almost all company activities (Stock & Lambert, 2001).
5. **Packaging Customization**
   The change from a push system to a pull system encourages manufacturers to always 'push' their goods to consumers through retailers (Indrajit & Djokopranoto, 2002). The more types of goods and the number of companies offered, the higher the competition in the market. The main determinants of competition are consumers who are free to make choices from a wide selection of goods and services available in the market. Therefore, companies must make goods that consumers choose, want and like.
6. **Transmission frequency.**
   Delivery frequency is the primary activity in the value chain. This activity contributes to the creation of products, sales and distribution to buyers, including the efficiency of the flow of goods to customers and the efficiency of warehousing activities (Indrajit & Djokopranoto, 2002). Value chain reflects the concept that goods and services will add value along with the increasing stages they pass through in a supply chain (Stevenson, 2002).
7. **Use of logistics tools (Common Logistical Equipment)**
   Linkages with suppliers and consumers can be seen from the use of various logistics tools to accelerate the movement of goods and services, for example the use of containers.
8. **The Role of Third-Party Distribution (Common use of Third-Party Logistics)**
   The distribution of products or services is easier if there is cooperation with third parties in the form of agents or retailers. The use of third parties also suppresses distribution more efficiently than the company itself does.

Competitiveness

Competitiveness is defined as the ability of an organization to create a position that can be defended through competition with others (Li et al., 2006). Company competitiveness is a way for companies to create value for their customers that exceeds the company's costs in creating it (Porter, 2003). Meanwhile, Hansen and Mowen (2000) argue that competitiveness is creating better customer value at the same or lower costs than competitors or creating equivalent value at lower costs than competitors.

Two competitiveness that a company can have, namely low cost and differentiation. The two competitiveness includes product / service quality, features, delivery of goods, follow-up service, ease of use, and other non-cost factors, which are factors that differentiate the company from its competitors (Porter, 2003). Both competitiveness combined with the scope of activities the

company wants to achieve results in three generic strategies for achieving above average performance in an industry, namely: cost advantage, differentiation, and focus. The focus strategy has two variants, namely a cost focus and a differentiation focus.

Cost advantage and differentiation strategies seek competitiveness across a wide range of industry segments, while strategies focus on either cost advantage or differentiation in a narrow segment. The idea that underlies the concept of this generic strategy is that competitiveness is the core of any strategy and the achievement of competitiveness makes companies have to make choices about what competitiveness they want to achieve and in which scope of activities the company can achieve them (Porter, 2003).

According to Danang Sunyoto (2015: 3), there are five dimensions that can be used to determine Competitive Advantage, namely as follows.

1. Price
2. Quality
3. Reliable delivery
4. Innovation
5. Time to market

The following is an explanation of the five dimensions above, namely as follows.

1. Price, which is charged to customers, is the attribute that most influences competitive advantage.
2. Quality, can be used as a strategic tool to achieve competitive advantage and is an important element in determining value for customers.
3. Delivery, which is reliable is the company's ability to deliver products / services on time, in the type and volume that customers want.
4. Innovation, is a broader concept that includes the application of new ideas, products, or processes. The extent of a company's product line affects the value and market share it can obtain. The more precisely a product / service can meet customer needs, the greater the value the customer will provide for the product / service. As the product line expands, more and more customers will be able to find products / services that meet their needs.
5. Time to market is an important dimension of competitive advantage. Time to market is the extent to which a company is able to launch new products faster than its competitors.

Previous Research

Ariani (2013) with the research title "Analysis of the Effect of Supply Chain Management on Company Performance", a study on Small and Medium Industries of Processed Food Typical of Padang, West Sumatra, explained that from the results of the multiple linear regression analysis carried out, process integration variables had the greatest influence on performance variables. SCM of the company (dependent) with a coefficient value of (0.289), then the information sharing variable with a value (0.286), then the long-term relationship variable (0.258) and the one with the smallest influence is the cooperation variable (0.254). This means that the four independent variables have a positive and significant effect on the dependent variable.

Fitrianto and Sudaryanto (2016) in a study on the Effect of Supply Chain Management on Outlet Operational Performance (Studies on Mobile Counters registered at PT. Multikom Indonesia

Semarang Branch) state that Information Sharing has a positive and insignificant effect on outlet operational performance. Long Term Relationship has a positive and significant effect on operational performance. outlet. Cooperation has a positive and insignificant effect on outlet operational performance. Integration Process has a positive and significant effect on outlet operational performance.

Indriani (2016) in his research on Analysis of the Influence of Trust in Retail Outlets on Suppliers to Achieve Long-Term Relationships (Case Study of Retail Outlets that Become Customers of PT Intan Alam Indah Semarang). The results of this study indicate that long-term cooperative relationships are built through trust. The factors that influence the level of trust in distributors are trust in salespeople, communication and satisfaction with the outlet service strategy.

Kurniawan and Kusumawardhani (2017) in research on the Effect of Supply Chain Management on the Performance of Batik MSMEs in Pekalongan stated that all independent variables sharing information, trust, long-term relationships, and collaboration have a positive and significant effect on improving supply chain management performance.

Majid and Dwiyanto (2017) in a study on the Analysis of the Effect of Long Term Relationship, Information Sharing, Trust and Process Integration on Supply Chain Management Performance (Study on the Exhaust Industry in Purbalingga) stated that all independent variables in the study were long-term relationships, information sharing. , trust, and process integration have a positive influence on supply chain management performance.

Maddepungeng (2017) The results show that MRP Supply Chain Management can lead to an increase in competitiveness (DS) by 47% and increase company performance (KP) by 67% and, competitiveness has a direct positive impact on company performance by 15%.

Suhong, et, al. (2005). Effective SCM will increase competitiveness and improve organizational performance. This study developed six dimensions of implementing SCM (partners, strategic suppliers, customer relations, information dissemination, information quality, implementing internal support, and procrastination).

Ilmiyati and Munawaroh (2016) The results show that Supply Chain Management has a significant effect on competitive advantage and company performance, and competitive advantage has a significant effect on company performance. Competitive advantage is also able to mediate in the influence of Supply Chain Management practices on company performance.

Sera Maya Santi (2018) The results of the study show that supply chain management affects competitive advantage, supply chain management affects company performance, competitive advantage affects company performance and supply chain management affects company performance through or without competitive advantage, but it is more likely direct effect on company performance.

Zailani, S., & Rajagopal, P. (2005). Research on Supply chain integration and performance: US versus East Asian companies shows that the need to react to market changes and the important role of supply chains in meeting these needs, and the potential benefits of supply chain

integration, can no longer be ignored. This potential will be realized only if the linkages between the various parts of the supply chain are recognized, and proper alignment is ensured between the design and implementation of the company's competitive strategy.

Research Hypothesis

The Effect of Technical and Managerial Assistance on Competitiveness

According to Pujawan (2005: 7) factories need to provide technical and managerial assistance to their suppliers because in the end this will create the ability to compete throughout the supply chain. Dahuri (2012) conveyed similar things to improve the quality of national fishermen's human resources so that they are competitive, it is necessary to provide education, training and counseling on fishing techniques, financial management, environmental management, and work ethics including achievement and motivation on an ongoing basis.

Research conducted by Rinda Novianty et al (2015) regarding the Development of Fishermen's Self-Capacity in the Context of Sustainable Capture Fisheries Development at PPN Pelabuhan Ratu also stated that the key indicators for developing self-capacity and fishermen's ethics are knowledge, competence, mental, commitment and understanding of laws and regulations. which can be the basis for developing bottom-up fisher community empowerment programs, namely cooperative fisheries management between the government, fishermen (main business actors and partners) and related stakeholders in making decisions before transforming into independent fishermen. Meanwhile, the key indicators for internal factors are formal education and work ethic. Meanwhile, the key indicators for external factors are understanding of laws and regulations, extension services, and the existence of cooperatives.

These key aspects of internal and external factors serve as the basis for supporting aspects in making policies for developing the capacity of fishermen who are independent, competitive and established through system development special education and training for fishermen's capacity building and extension services with materials that are in accordance with the characteristics and needs of fishermen.

Kusumastanto and Wahyudin (2012) also state that fishermen development through counseling is the spearhead of national fisheries development, among others through strengthening and fostering coastal communities to increase knowledge and skills related to fishing business so that they have high bargaining power. Based on the foregoing, the following hypothesis can be drawn:
H1: Technical and Managerial Assistance has a significant effect on the competitiveness of coastal fishing communities in North Minahasa Regency

The Effect of Information Sharing on Competitiveness

Information Sharing is the intensity and capacity of companies in their interactions to share information with partners regarding joint business strategies. Information Sharing also allows supply chain members to obtain, maintain, and convey the information needed to ensure effective decision making, and is a factor that can strengthen the collaboration elements as a whole, therefore industrial bottlenecks can be reduced by Information Sharing (Simatupang & Sridharan in Yaqoub, 2012).

Information sharing activities are the main backbone in all supply chain management activities to reduce costs and increase customer satisfaction (Spekman et al. In Shidharan and Simatupang, 2009). Effective information sharing activities provide a common basis for integrated action between different functions from other companies in the supply chain. (Whipple et al. In Shidharan and Simatupang, 2009). According to Yongki (2015) Information Sharing is communication that is established in the sharing of important information by companies to business partners.

Ariani (2013), in his research using independent variables sharing information has a positive effect on company performance. Information sharing allows for an increase in the flow of raw material supplies and reduces lead time (waiting time) thereby optimizing the production process. Information sharing can also reduce uncertainty throughout the chain. So that information sharing has an effect on the company's operational performance (Ahiwar, 2014). Based on the description above, a hypothesis can be formulated as follows:
H2: Information Sharing has a significant effect on the competitiveness of coastal fishing communities in North Minahasa Regency

The Effect of Trust on Competitiveness
According to Doney & Cannon (1997, p.40), trust in suppliers is able to form a good cooperative relationship between customers and suppliers and is the key to maintaining this cooperative relationship. Trust is a party's belief that the other party will fulfill its promise (Moore, 1998). An important aspect of this definition is the statement that trust is the belief or expectation of a trusted partner as a result of the partner's expertise and reliability. This is in line with the opinion of Doney and Cannon (1997, p. 36) which states that trust arises as a result of partner reliability and integrity which is shown through various attitudes such as consistency, competence, fairness, responsibility, helpfulness and concern.

Ferlando's research (2016) entitled The Effect of Trust and Information Sharing on Relationship Commitment in Supply Chain Management and research from Bernard (2011) entitled Analysis of the Effect of Relationship Quality Factors on Supply Chain Performance also states the same thing that trust has a positive effect on performance. supply chain management. According to Bernard (2011), trust is very important in a supply chain management because it plays an important role in building communication and cooperation. Sahay (2003) explains that trust is very important in the supply chain because it can reduce uncertainty and make relationships stable. Based on the foregoing, the following conclusions can be drawn:
H3: Trust has a significant effect on the competitiveness of coastal fishing communities in North Minahasa Regency

The Influence of Long-Term Relationships on Competitiveness
Ganesan in Indriani (2006) defines a long-term relationship as a perception of the interdependence of buyers on suppliers, either in the context of products or relationships that are expected to bring benefits to buyers in the long term.

According to Indriani (2006), a long term relationship (long term relation) is the company's ability to foster good, sustainable relationships with suppliers. This is because the company assumes that good long-term relationships can bring benefits. According to Lestari (2009) in the

context of the value chain or supply chain, the attachment between suppliers and companies is the strongest collaboration. Based on the description above, a hypothesis can be formulated as follows:

H4: Long-term relationships affect competitiveness

Effect of Process Integration on Competitiveness

Integration in the supply chain shows a complex process of cooperation between companies and suppliers and buyers which, if managed, will increase efficiency in company operations and can further increase company profits and provide satisfaction for all parties (Cousineau et al in Setiawan and Rahardian, 2005).

Gimenez and Ventura (2003) define supplier integration as a unity and coherence of logistics activities across company or organizational boundaries that include suppliers and producers. Flynn et al. (2010) stated that supplier integration is one of the important factors that enable supply chain members to act in an integrated manner. This is done to maximize the value of the supply chain. According to Li et al. (2006), supplier integration is a long-term relationship between an organization and a supplier. This relationship has two objectives, namely: a) to improve the company's operational and strategic capabilities, and b) to help the company achieve sustainable benefits (Li et al., 2006). The benefits obtained from implementing supplier integration include: a) reduced costs, b) reduced inventory, c) less waiting time, and d) increased competitive advantage (Gimenez and Ventura, 2003).

Based on research conducted by Zailani and Rajagopal (2005), process integration has a positive effect on supply chain management performance. In addition, research from Ariani (2013) entitled Analysis of the Effect of Supply Chain Management on Company Performance and research by Mellat-Parast and Spillan (2014) entitled Logistics and supply chain process integration as a source of competitive advantage also states the same thing that the process integration has a positive effect on supply chain management performance. Zailani and Rajagopal (2005) further explained that effective process integration in supply chain management is the key to success for companies to gain a competitive advantage. Based on the description above, a hypothesis can be formulated as follows:

H4: The integration process affects the competitiveness of coastal fishing communities in North Minahasa Regency.

Research Model

Based on the above hypothesis, the research model is as follows:

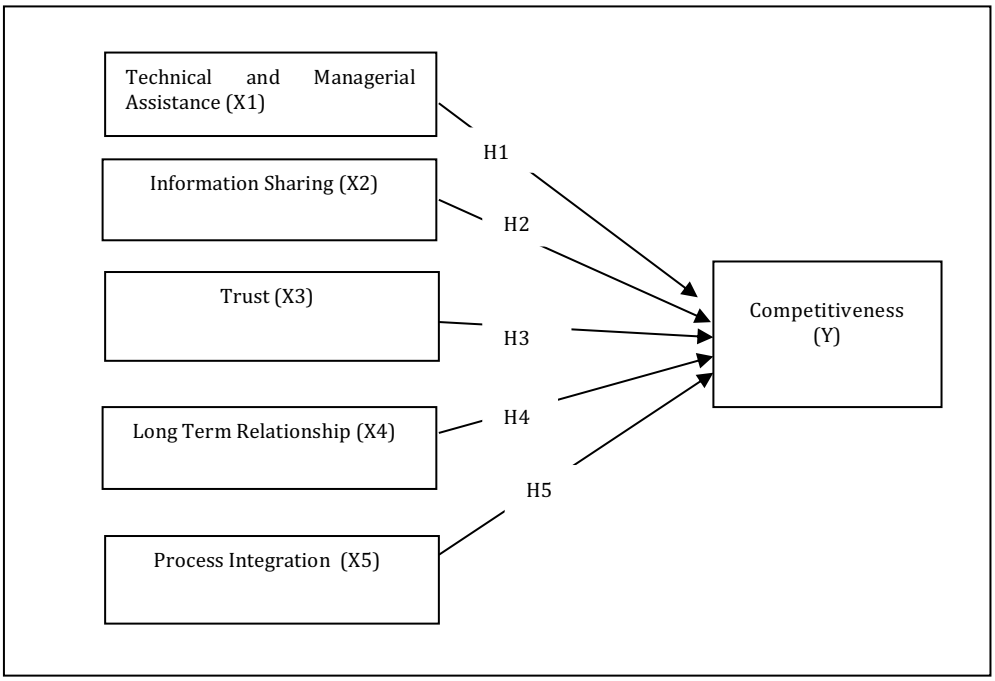


Figure 2.1 Research Model

RESEARCH METHODS METHODOLOGY

Research Type and Design

Types of Research

This type of research is an associative research with a causal relationship, namely research that aims to determine the relationship between technical and managerial assistance, information sharing, trust, long-term relationships, and process integration towards the competitiveness of coastal fishing communities in North Minahasa Regency. According to Sugiyono (2017: 37) regarding the associative approach, which is a research problem formulation that asks about the relationship between two or more variables.

Data Source

According to Sugiyono (2017: 137), when viewed from the source, the data divided into two, namely primary data and secondary data. Primary Data

Primary data is a data source that directly provides data to data collectors. Primary data in this study were obtained directly from fishermen who own boats who act as suppliers for processing companies.

Data Sekunder

Secondary data sources are data sources obtained by reading, studying and understanding through other media which are sourced from literature, books and company documents. Thus, the secondary data sources used in this study were data sources obtained through literature,

internet media and data from related agencies such as North Sulawesi Provincial DKP and North Minahasa Regency DKP.

Population, Sampling Technique and Sample Size

Sugiyono (2017: 80) states that population is an area generalization of objects that have certain qualities and characteristics determined by the researcher to study and then draw conclusions. The population in this study were fishermen who owned motor boats who were suppliers for fish companies in Bitung with a population of 163 motor boats (Data from the Department of DKP, North Minahasa Regency, 2018).

The sample is part of the population that is expected to represent population in the study. According to Sugiyono (2017: 81) the sample is part of the number and characteristics possessed by the population. Samples were carried out because researchers have limitations in conducting research both in terms of time, effort, funds and a very large population. The sampling technique used in this study is probability sampling with the type of simple random sampling. Because fishermen who act as suppliers to the factory do not have special privileges or have no ties to the factory, so they have the same opportunity to be sampled. Determination of sample size using the Slovin formula. The formula used is as follows (Sanusi, 2011: 101).

$$n = \frac{N}{1 + N\,(e)^{2}}$$

Notation:

n = sample size.
N = population size.
e = The percent allowance for inaccuracy due to sampling errors that is still tolerated or desirable, in this sample is 10%.

Therefore, the sample size calculation for research with a 10% percent allowance is as follows:

$$n = \frac{163}{1 + 163\,(0{,}1)^{2}}$$

$$= 61{,}977$$

$$= 62$$

Based on the above calculations, the number of samples that can be taken in this study is a minimum of 62 respondents.

Operational Definition

The operational definition is describing the characteristics of an object (property) into observable elements that cause the concept to be measured and operationalized in research. The result of operationalizing this concept is the concept definition of each variable and concept used in research (Jogiyanto, 2004: 62).

Table 4.1: Operational Definition of Variables

Research variable	Operational definition	Indicator
Competitiveness (Dependent Variable Y)	Company competitiveness is a way for companies to create value for their customers that exceeds the company's costs in creating it (Porter, 1993).	1. Price 2. Quality 3. Delivery (Danang Sunyoto, 2015)
Technical and Managerial Assistance (Independent Variable X1)	Technical and Managerial Assistance is capital assistance, experts, business management and so on (KBBI in Lesor.id)	1. Assistance (technical and managerial) 2. Business Capital 3. Vehicle / logistics assistance (KBBI in Lastra.id)
Information Sharing (Independent Variable X2)	Information Sharing is the company's intensity and capacity interaction to share information with partners relating to joint business strategies (Simatupang and Sridharan, 2008)	1. Accurate 2. Right 3. Can be accessed when needed (Chopra and Meindl in Pujawan and Mahendrawathi, 2010)
Trust (Independent Variable X3)	Trust in a cooperative relationship has the meaning of company belief, that the partner will take actions that bring the company to a certain advantage, and vice versa, instead of doing something that is detrimental to the company (James C. Anderson & James A. Narus, 1990, p. 45)	1. Open in Communication 2. Reducing Supervision 3. Giving Positive Information 4. Accepting Risk 5. Convenience 6. Satisfaction Donni June (2017, p. 116)
Long Term Relationship (Independent Variable)	Long-term relationships are the company's ability to establish long-term relationships with suppliers because the company considers these relationships to bring cost benefits (Indriani, 2006).	1. Commitment to mutual benefit 2. Maintenance of relationships 3. The same goal is defined as the same direction of thought Morgan and Hunt (1994, p. 35) and Hewett and Bearden (2001, p. 63)
Process Integration (Independent Variable	Process integration (process integration) ie consider aspects organization to be cooperate for creating that current sustainable and efficient of materials and resources (Miguel and Brito, 2011).	1. Access to the planning system. 2. Use of shared information technology 3. Knowledge of Inventory Mix Level. 4. Frequency of transmission. 5. The Role of Third Party Distribution Frohlich and Westbrook (2001)

Variable Measurement

According to Sugiyono (2017: 102) states that the research instrument is a tool used to measure observed natural and social phenomena. Thus the number of instruments to be used for research will depend on the number of variables studied. Each instrument has a scale, and the scale used in this study is the Likert scale, with the following categories:

Strongly Agree (SS)	= 5
Agree (S)	= 4
Neutral (N)	= 3
Disagree (TS)	= 2
Strongly Disagree (STS)	= 1

Data Analysis Technique

The collected data will be analyzed in several stages, firstly testing the validity and reliability of the research instrument, testing classical assumptions, and finally multiple linear regression analysis. Data obtained from respondents through questionnaires were coded according to a Likert scale of 1 - 5, and then tabulated using statistical analysis with the SPSS computer program.

Instrument Validity Test

Validity is the accuracy or accuracy of an instrument in measuring what you want to measure. This discussion will discuss the item validity testing method. The validity of the item is indicated by the correlation or support for the total item (total score), the calculation is done by correlating the item score with the item total score. If we use more than one factor it means testing the validity of the item by correlating the item score with the factor score, then proceeding to correlate the item score with the total factor score (the sum of several factors). From the results of the calculation of the correlation will be obtained a correlation coefficient that is used to measure the level of validity of an item and to determine whether an item is suitable for use or not.

In determining the feasibility of an item to be used, a significance test of the correlation coefficient is carried out at the 0.05 significance level, meaning that an item is considered valid if it has a significant correlation to the total score. For this discussion, a significance test of the correlation coefficient was carried out with the criteria of using critical r at a significance level of 0.05 (significance of 5% or 0.05 is a standard measure that is often used in research). The test criteria are as follows:

1. If r count ≥ r table (2-sided test with sig. 0.05) then the instrument or question items have a significant correlation to the total score (declared valid).
2. If r count <r table (2-sided test with sig. 0.05) then the instrument or question items are not significantly correlated with the total score (declared invalid).

Instrument Reliability Test

Reliability test is used to determine the consistency of measuring instruments, whether the measuring instruments used are reliable and remain consistent if the measurement is repeated. using the Alpha method (Cronbach's). The alpha method is very suitable for use on scaled scores

(eg 1-4, 1-5) or range scores (eg 0-20, 0-50). The significance test was carried out at the 0.05 significance level, which means that the instrument can be said to be reliable if the alpha value is greater than the critical r product moment.

Classic assumption test

The classical assumption test is a statistical requirement that must be met in multiple linear regression analysis based on ordinary least square (OLS).

Normality Test

The normality test in the regression model is used to test whether the residual value resulting from the regression is normally distributed or not. A good regression model is one that has a residual value that is normally distributed. The normality test method that will be used is the Histogram regression standardized residual and the Normal P-P Plot of regression standardized residual.

Multicollinearity Test

The multicollinearity test is used to determine whether or not there are deviations from the classic multicollinearity assumption, namely the existence of a linear relationship between the independent variables in the regression model. The prerequisite that must be met in the regression model is the absence of multicollinearity. In this discussion, a multicollinearity test will be carried out by looking at the value of inflation factor (VIF) in the regression model. According to Santoso (2014: 351), a regression model is said to be free from multicollinearity if:

1. Has a VIF value of around number 1
2. Have a tolerance number close to 1

Where: Tolerance = 1 / VIF or VIF = 1 / Tolerance

Also tested by comparing the individual determination coefficient (r2) with the determination value simultaneously (R2). The test criteria is if r2> R2 then multicollinearity occurs and if r2 <R2 then multicollinearity does not occur.

Heteroscedasticity Test

The heteroscedasticity test is used to determine whether or not there are deviations from the classic assumption of heteroscedasticity, namely the inequality of variants of the residuals for all observations in the regression model. The prerequisite that must be met in the regression model is the absence of heteroscedasticity symptoms. The test method used is the Glesjer test. The Glejser test is performed by regressing the independent variables with their absolute residual values. If the significance value between the independent variables and the absolute residual is more than 0.05, there is no heteroscedasticity problem.

Multiple Linear Regression Analysis

Multiple linear regression analysis is a linear relationship between two or more independent variables (X1, X2,… .Xn) and the dependent variable (Y). This analysis is to determine the direction of the relationship between the independent variable and the dependent variable whether each independent variable has a positive or negative relationship and to predict the

value of the dependent variable if the value of the independent variable has increased or decreased. The multiple linear regression equation is as follows:

Y' = a + ß1X1+ ß2X2+ ß3X3+ ß4X4+ ß5X5

Annotation:
Y' = Competitiveness
X1 = Technical and Managerial Assistance
X2 = *Information Sharing*
X3 = Trust
X4 = Long Term Relationship
X5 = Process Integration
a = Constant (Y value 'if X1, X2, X3, X4, X5 = 0)
ß = Regression coefficient (value increase or decrease)

Hypothesis Test

Coefficient of Determination (R2)

The coefficient of determination (R2) in essence measures how far the model's ability to explain the variation in the dependent variable. A small R2 value means that the ability of the independent variables to explain the variation in the dependent variable is very limited (Ghozali, 2012: 97).

F Test

The F test uses a significant level of 5%, by comparing the calculated F value with the F value according to the table, if the calculated F value is greater than the F table value, then the regression model can be used to predict or in other words the model used is fit (Ghozali). , 2012: 98).

T Test

The t test is used to determine whether in the regression model the independent variables (X1, X2,.....Xn) partially have a significant effect on the dependent variable (Y). The t test uses a significant level of 5%, by comparing the t statistical value with the critical point according to the table, if the t statistical value is higher than the t table value, we accept an alternative hypothesis which states that an independent variable individually affects the dependent variable.

RESULTS AND DISCUSSION

General Description

North Minahasa Regency with the capital city of Airmadidi, is located in North Sulawesi Province. This district has a strategic position because it is located between two big cities that have strategic value in North Sulawesi Province, namely Manado as the capital of North Sulawesi province and Bitung as a port city. The distance from Manado city center to Airmadidi is around 12 km and can be reached within 30 minutes. Part of Sam Ratulangi Airport is located in the North Minahasa region.



Figure 5.1. Map of North Minahasa Regency

Based on the geographic location of the North Minahasa district, of the 10 existing sub-districts, there are 4 sub-districts that are located on the coast, namely Kema District, Wori District, West Likupang District and East Likupang District. This makes North Minahasa Regency have a large enough potential for capture fisheries.

Capture Fisheries

Based on data released by BPS 2020, capture fisheries production in North Minahasa Regency is in the volume of 33,821.08 tons with a value of Rp. 963,900,666.00. Is in the third position as a contributor to capture fisheries production in North Sulawesi province after Bitung City and Minahasa Regency.

Table 4.1: Capture Fisheries Production and Value According to Regencies / Cities in North Sulawesi, 2019

Regency / City	Capture Fisheries	
	Volume (ton)	Value (000, Rp)
BolaangMongondow	18 250,74	529 453 967,40
Minahasa	54 204,50	1 518 209 187 550,00
Kepulauan Sangihe	18 905,72	496 180 621,40
Kepulauan Talaud	13 552,20	355 677 489,00
Minahasa Selatan	13 146,50	350 464 364,175
Minahasa Utara	33 821,08	963 900 666,00
Bolaang Mongondow Utara	7 532,80	193 065 664,00
Siau Tagulandang Biaro	17 030,20	446 957 599,00
Minahasa Tenggara	27 300,37	743 252 491,58
Bolaang Mongondow Selatan	8 945,00	229 260 350,00
Bolaang Mongondow Timur	7 709,21	152 335 345 920,00
City		
Manado	28 738,00	782 392 050,00
Bitung	135 164,00	3 679 839 900,00

Tomohon	-	-
Kotamobagu	-	-
Sulawesi Utara	384 300,32	10 525 209 197, 23

Source: BPS Sulut, 2020

This table indicates that North Minahasa Regency makes a significant contribution to the economy of North Sulawesi in the capture fisheries sub-sector. The following is data on the number of boats and ships in North Minahasa Regency in 2018.

Table 4.2: Data on the Number of Boats and Ships in North Minahasa Regency in 2018

No	Village Name	Number of Fishermen	Boat Without Motor		Outboard motors				Motor Ships			
			Small	Moderate	KT	15 PK Yamaha	40 PK Yamaha	< 5GT	5-10 GT	11-20 GT	21-30 GT	31-50 GT
1	Kema	1460	210		60	36	20		25	7	54	12
2	Likupang Timur	2210	810		805	250	30	10	24	1		
3	Likupang Barat	3064	69	1	995	190	74		38	2		
4	Wori	2680	910	25	417	411	9					
5	Kauditan	100			9	3						
		9514	1999	26	2286	890	133	10	87	10	54	12

Source: Department of Marine Affairs and Fisheries, Kab. North Minahasa, 2020

Research result

Instrument Validity Test

Validity is the accuracy or accuracy of an instrument in measuring what you want to measure. In this discussion, the item validity testing method is discussed. The validity of the item is indicated by the correlation or support for the total item (total score), the calculation is done by correlating the item score with the item total score without involving the total score. This analysis is used to avoid over-estimating the value of the item or feature coefficient. From the results of the calculation of the correlation will be obtained a correlation coefficient that is used to measure the level of validity of an item and to determine whether an item is suitable for use or not. In determining the feasibility of an item to be used, a significance test of the correlation coefficient is carried out at the 0.05 significance level, meaning that an item is considered valid if it has a significant correlation to the total score. The test criteria are as follows:

1. If r count ≥ r Table (2-sided test with sig. 0.05) then the instrument or question items have a significant correlation to the total score (declared valid).
2. If r count <r Table (2-sided test with sig. 0.05) then the instrument or question items are
3. not significantly correlated with the total score (declared invalid).

Validity Test of Competitiveness Variable Items (Y)

Table. 4.3: Validity Test of Competitiveness Variable Items (Y)

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Y.1	8,39	1,389	,452	,932
Y.2	8,27	1,153	,753	,618
Y.3	8,34	1,146	,774	,596

Source: Processed Data, 2020

Based on Table 5.3. It can be seen that item Y.1 has a correlation value or r count 0.452, item Y.2 has a correlation value or r count 0.753, and item Y.3 has a correlation value or r count 0.774. With the number of respondents 62, the significance level of 0.05 the value of r table is 0.254. Thus, because r count items Y.1, Y.2, Y.3 ≥ r table, competitiveness items are declared valid.

Validity Test of Technical and Managerial Assistance Variable Items (X1)

Table. 4.4: Uji Validitas Item Variabel Bantuan Teknis dan Manajerial (X1)

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
X1.1	8,34	1,146	,558	,986
X1.2	7,87	,901	,863	,721
X1.3	7,89	,856	,876	,704

Source: Processed Data, 2020

Based on Table 5.4. It can be seen that item X1.1 has a correlation value or r count of 0.558, item X1.2 has a correlation value or r count of 0.863, and item X1.3 has a correlation value or r count of 0.876. With the number of respondents 62, the significance level of 0.05 the value of r table is 0.254. Thus, because r counts items X1.1, X1.2, X1.3 ≥ r table, the items of technical and managerial assistance are declared valid.

Validity Test of Information Sharing Variable Items (X2)

Table 4.5: Validity Test of Information Sharing Variable Items (X2)

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
X2.1	8,77	,669	,431	,518
X2.2	9,15	,684	,450	,495
X2.3	8,95	,604	,412	,553

Source: Processed Data, 2020

Based on Table 5.5. It can be seen that item X2.1 has a correlation value or r count 0.431, item X2.2 has a correlation value or r count 0.450, and item X1.3 has a correlation value or r count 0.412. With the number of respondents 62, the significance level of 0.05 the value of r table is 0.254. Thus, because r counts items X2.1, X2.2, X2.3 ≥ r table, Information Sharing items are declared valid.

Validity Test of Trust Variable Items (X3)

Table.4.6: Validity Test of Trust Variable Items (X3)

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
X3.1	21,03	2,655	,446	,724
X3.2	21,39	2,602	,466	,719
X3.3	21,53	2,745	,487	,715
X3.4	21,24	2,547	,464	,720
X3.5	21,44	2,512	,569	,691
X3.6	22,00	2,459	,505	,708

Source: Processed Data, 2020

Based on Table 5.6. It can be seen that item X3.1 has a correlation value or r count 0.446, item X3.2 has a correlation value or r count 0.466, item X3.3 has a correlation value or r count 0.487, item X3.4 has a correlation value or r count 0.464, item X3.5 has a correlation value or r count 0.569, and item X3.6 has a correlation value or r count 0.505. With the number of respondents 62, the significance level of 0.05 the value of r table is 0.254. Thus, because r counts items X2.1, X2.2, X2.3 ≥ r table, the items of trust towards suppliers are declared valid.

Test of the Validity of Long-Term Relationship Variable Items (X4)

Table.4.7: Uji Validitas Item Variabel Hubungan Jangka Panjang (X4)

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
X4.1	7,42	,838	,757	,922
X4.2	7,55	,940	,845	,844
X4.3	7,55	,875	,850	,832

Source: Processed Data, 2020

Based on Table 5.7. It can be seen that item X4.1 has a correlation value or r count 0.757, item X4.2 has a correlation value or r count 0.845, and item X4.3 has a correlation value or r count 0.850. With the number of respondents 62, the significance level of 0.05 the value of r table is 0.254. Thus, because r counts items X4.1, X4.2, X4.3 ≥ r table, the items of Long-Term Relationships are declared valid.

Validity Test of Process Integration Variable Items (X5)

Table.4.8: Uji Validitas Item Variabel Integrasi Proses (X5)

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
X5.1	20,90	2,646	,307	,725
X5.2	21,37	2,598	,406	,696
X5.3	21,40	2,572	,466	,682
X5.4	21,26	2,424	,454	,683
X5.5	21,87	2,344	,451	,685
X5.6	21,18	2,050	,657	,611

Source: Processed Data, 2020

Based on Table 5.8. It can be seen that item X5.1 has a correlation value or r count 0.307, item X5.2 has a correlation value or r count 0.406, item X5.3 has a correlation value or r count 0.466, item X4.4 has a correlation value or r count 0.454, item X5.5 has a correlation value or r count 0.451, and item X5.6 has a correlation value or r count 0.657. With the number of respondents 62, the significance level of 0.05 the value of r table is 0.254. Thus, because r count items X2.1, X2.2, X2.3 ≥ r table, the items of process integration are declared valid.

Reliability Test

Reliability test is used to determine the consistency of measuring instruments, whether the measuring instruments used are reliable and remain consistent if the measurements are repeated using the Alpha method (Cronbach's). According to Ghozali (2011: 133), if the Cronbach's Alpha value is> 0.6, then the research instrument is reliable. If the value of Cronbach's Alpha <0.6, then the research instrument is not reliable.

Reliability Test of Variable Items Competitiveness (Y)

Table 4.9: Reliability Test of Variable Items Competitiveness (Y)

Reliability Statistics

Cronbach's Alpha	N of Items
,802	3

Source: Processed Data, 2020

Table 5.9. shows that the value of Cronbach's alpha item competitiveness variable is 0.802 which means> 0.6 thus the variable competitiveness of the research instrument is reliable.

Reliability Test of Variable Items for Technical and Managerial Assistance (X1)

Table 4.10: Reliability Test of Variable Items for Technical and Managerial Assistance (X1)

Reliability Statistics

Cronbach's Alpha	N of Items
,873	3

Source: Processed Data, 2020

Table 5.10. shows that the value of Cronbach's alpha item of the technical and managerial assistance variable is 0.873 which means> 0.6, thus the technical and managerial assistance variable for the research instrument is reliable.

Reliability Test of Information Sharing Variable Items (X2)

Table 4.11: Reliability Test of Information Sharing Variable Items (X2)

Reliability Statistics

Cronbach's Alpha	N of Items
,620	3

Source: Processed Data, 2020

Table 5.11. shows that the value of Cronbach's alpha item Information Sharing variable is 0.620 which means> 0.6 thus for the Information Sharing variable the research instrument is reliable.

Reliability Test of the Item Variable of Trust towards Suppliers (X3)

Table 4.12: Reliability Test of Variable Items of Trust towards Suppliers (X3

Reliability Statistics

Cronbach's Alpha	N of Items
,749	6

Source: Processed Data, 2020

Table 5.12. shows that the value of Cronbach's alpha item trust in suppliers is 0.749 which means> 0.6 thus the variable trust in the supplier of the research instrument is reliable.

Reliability Test of Variable Items Long-Term Relationship (X4)

Table 4.13. Uji Reliabilitas Item Variabel Hubungan Jangka Panjang (X4)

Reliability Statistics

Cronbach's Alpha	N of Items
,905	3

Source: Processed Data, 2020

Table 5.13. shows that the value of Cronbach's alpha item long-term relationship variable is 0.905 which means> 0.6 thus for the long-term relationship variable the research instrument is reliable.

Reliability Test of Process Integration Variable Items (X5)

Table 4.14.: Uji Reliabilitas Item Variabel Integrasi Proses (X5)

Reliability Statistics

Cronbach's Alpha	N of Items
,721	6

Source: Processed Data, 2020

Table 5.14. shows that the value of Cronbach's alpha item process integration variable is 0.721 which means> 0.6 thus for the process integration variable the research instrument is reliable.

Classic Assumption Test

The classical assumption test is a statistical requirement that must be met in multiple linear regression analysis based on ordinary least square (OLS). Because the data used in this study is cross-sectional data, the autocorrelation test was not carried out (Santoso 2014: 349).

Normality Test

The normality test in the regression model is used to test whether the residual value resulting from the regression is normally distributed or not. A good regression model is one that has a

residual value that is normally distributed. The normality test method used in this study is the One Sample Kolmogorov Smirnov test.

The basis for making normality test decisions, namely:

1. If the value of Asymp. Sig. (2-tailed)> 5% or 0.05, then the data is considered to be normally distributed.
2. If the value of Asymp. Sig. (2-tailed) <5% or 0.05, then the data is considered to be not normally distributed.

Table.4,15: Normality Test

One-Sample Kolmogorov-Smirnov Test

			Unstandardized Residual
N			62
Normal Parameters[a,b]	Mean		,0000000
	Std. Deviation		,80990468
Most Extreme Differences	Absolute		,081
	Positive		,048
	Negative		-,081
Test Statistic			,081
Asymp. Sig. (2-tailed)[c]			,200[d]
Monte Carlo Sig. (2-tailed)[e]	Sig.		,395
	99% Confidence Interval	Lower Bound	,383
		Upper Bound	,408

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

d. This is a lower bound of the true significance.

e. Lilliefors' method based on 10000 Monte Carlo samples with starting seed 957002199.

Based on the results of the normality test using one sample Kolmogorof Smirnov in the Table, it can be seen that the Asymp.Sig (2-tailed) is 0.200 which means> 0.05, thus the data is considered to be normally distributed.

Multicollinearity Test

The multicollinearity test is used to determine whether or not there are deviations from the classic multicollinearity assumption, namely the existence of a linear relationship between the independent variables in the regression model. The prerequisite that must be met in the regression model is the absence of multicollinearity. In this discussion, a multicollinearity test will be carried out by looking at the value of inflation factor (VIF) in the regression model.

The basis for decision making on the multicollinearity test with Tolerance and VIF is as follows:
Guidelines for decisions based on the value of Tolerance

1. If the Tolerance value is greater than 0.10, it means that there is no multicollinearity in the regression model.
2. If the Tolerance value is smaller than 0.10, it means that there is multicollinearity in the regression model.

Decision Guidelines Based on VIF (Variance Inflation Factor) Value

1. If the VIF value <10.00, it means that there is no multicollinearity in the regression model.
2. If the VIF value> 10.00, it means that there is multicollinearity in the regression model.

Table.4.16: Uji Multikolinearitas

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	-6,828	1,622		-4,210	<,001		
	X1	,262	,113	,236	2,313	,024	,447	2,238
	X2	,403	,127	,282	3,173	,002	,589	1,699
	X3	,499	,117	,404	4,249	<,001	,515	1,943
	X4	,170	,125	,148	1,363	,178	,395	2,531
	X5	,001	,052	,002	,018	,986	,615	1,627

a. Dependent Variable: Y

Source: Processed Data, 2020

Based on Table 5.16, it is obtained that the Tolerance X1 value is 0.447, which means> 0.10, the Tolerance X2 value is 0.589 which means> 0.10, the Tolerance X3 value is 0.515 means> 0.10, the Tolerance X4 value is 0.395 means> 0.10 and the Tolerance X5 value is 0.615 means> 0.10. Thus it can be said that there is no multicollinearity in the regression model.

Heteroscedasticity Test

The heteroscedasticity test is used to determine whether or not there are deviations from the classic assumption of heteroscedasticity, namely the inequality of variants of the residuals for all observations in the regression model. The prerequisite that must be met in the regression model is the absence of heteroscedasticity symptoms.

The test method used is the Glesjer test. The Glejser test is performed by regressing the independent variables with their absolute residual values. If the significance value between the independent variables and the absolute residual is more than 0.05, there is no heteroscedasticity problem.

Table.4.17: Heteroscedasticity Test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1,356	,913		1,486	,143
	X1	-,038	,064	-,112	-,589	,558
	X2	,094	,071	,218	1,309	,196
	X3	-,069	,066	-,186	-1,048	,299
	X4	,007	,070	,019	,096	,924
	X5	-,031	,029	-,174	-1,070	,289

a. Dependent Variable: ABS_RES

Source: Processed Data, 2020

Based on Table 5.17. obtained a significance value of the independent variable more than 0.05, thus there is no heteroscedasticity problem.

Multiple Regression Analysis Test

Multiple linear regression analysis is a linear relationship between two or more independent variables (X1, X2,… .Xn) and the dependent variable (Y). This analysis is to determine the direction of the relationship between the independent variable and the dependent variable whether each independent variable has a positive or negative relationship and to predict the value of the dependent variable if the value of the independent variable has increased or decreased. The multiple linear regression equation is as follows:

$$Y' = a + b1X1 + b2X2 + \ldots.. + bnXn$$

Annotation:
Y '= Competitiveness
X1 = Technical and Management Assistance
X2 = Sharing Information
X3 = Trust
X4 = Long Term Relationship
X5 = Process Integration
a = constant (Y value if X1, X2… ..Xn = 0)
b = regression coefficient (value of increase or decrease)

Table 4.18: Analisis Regresi Linear Berganda

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-6,828	1,622		-4,210	<,001
	X1	,262	,113	,236	2,313	,024
	X2	,403	,127	,282	3,173	,002
	X3	,499	,117	,404	4,249	<,001
	X4	,170	,125	,148	1,363	,178
	X5	,001	,052	,002	,018	,986

a. Dependent Variable: Y

Source: Processed Data, 2020

Table. 4.19

Casewise Diagnostics[a]

Case Number	Std. Residual	Y	Predicted Value	Residual
1	,000	14	14,00	,000
2	,308	15	14,74	,261
3	,025	12	11,98	,021
4	-2,113	9	10,79	-1,786
5	-1,167	12	12,99	-,986
6	,458	15	14,61	,387
7	,407	14	13,66	,344
8	-,857	12	12,72	-,725
9	1,199	14	12,99	1,014
10	-,380	12	12,32	-,322
11	-,857	12	12,72	-,725
12	1,086	14	13,08	,918
13	1,792	15	13,49	1,515
14	,111	11	10,91	,094
15	,140	11	10,88	,118
16	,764	12	11,35	,646
17	-,300	13	13,25	-,253
18	,817	12	11,31	,691
19	,817	12	11,31	,691
20	-,340	10	10,29	-,287
21	-1,592	13	14,35	-1,346
22	,609	14	13,49	,515
23	,537	14	13,55	,454
24	-,646	13	13,55	-,546
25	-1,522	11	12,29	-1,287
26	-1,469	9	10,24	-1,242
27	1,798	13	11,48	1,519
28	-,717	13	13,61	-,606
29	-2,376	12	14,01	-2,009
30	,103	14	13,91	,087
31	1,199	14	12,99	1,014
32	-1,054	12	12,89	-,891
33	,016	13	12,99	,014
34	-,213	12	12,18	-,180
35	-,719	12	12,61	-,608
36	-,693	11	11,59	-,586
37	,722	14	13,39	,611
38	,350	13	12,70	,296
39	1,407	12	10,81	1,189
40	,347	12	11,71	,294
41	,696	15	14,41	,588
42	-1,193	13	14,01	-1,009
43	-,959	10	10,81	-,811
44	,817	12	11,31	,691
45	1,407	12	10,81	1,189
46	,103	14	13,91	,087
47	-,216	11	11,18	-,183
48	,967	12	11,18	,817
49	,377	12	11,68	,318
50	-,574	13	13,49	-,485
51	,106	15	14,91	,090
52	,106	15	14,91	,090
53	-,600	14	14,51	-,507
54	-,100	12	12,08	-,085
55	-1,399	10	11,18	-1,183
56	,701	11	10,41	,592
57	-,685	10	10,58	-,579
58	,967	12	11,18	,817
59	-1,046	9	9,88	-,884
60	1,905	15	13,39	1,611
61	,609	14	13,49	,515
62	,013	12	11,99	,011

a. Dependent Variable: Y

Source: Processed Data, 2020

Based on the output of the regression results in Table 5.18. the following equation is obtained:

Y’ = a + b1X1 + b2X2 + b3X3 + b4X4

Y’ = - 6,828 + 0,262X1 + 0,403X2 + 0,499X3 + 0,170X4 + 0,001X5

Annotation:

Y '= Competitiveness

a = constant
b1, b2, b3, b4, b5 = regression coefficient
X1 = Technical and Managerial Assistance
X2 = InformationSharing
X3 = Trust
X4 = Long Term Relationship
X5 = Process Integration

From the results of the multiple linear regression equation, it can be seen that:

1. The constant coefficient in the regression is -6,828. This negative constant coefficient indicates that if there is no technical and managerial assistance, information sharing, trust, long-term relationships, and process integration, competitiveness will decrease by 6,828.
2. The regression coefficient for the technical and managerial building variables is 0.262. This positive coefficient means that if there is an increase in the technical and managerial assistance variable by 1 unit, the competitiveness will increase by 0.262.
3. The regression coefficient for the information sharing variable is 0.403. This positive coefficient means that if there is an increase in the information sharing variable by 1 unit, competitiveness will increase by 0.403.
4. The regression coefficient for the information sharing variable is 0.499. This positive coefficient means that if there is an increase in the confidence variable by 1 unit, the competitiveness will increase by 0.499.
5. The regression coefficient for the information sharing variable is 0.170. This positive coefficient means that if there is an increase in the long-term relationship variable by 1 unit, the competitiveness will increase by 0.170.
6. The regression coefficient for the information sharing variable is 0.001. This positive coefficient means that if there is an increase in the process integration variable by 1 unit, the competitiveness will increase by 0.001.

Casewise Diagnostic is to test univariate outliers caused by the dependent variable or the dependent variable (Y). It can be interpreted that if the dependent variable contains outliers, it is likely that there will be univariate outliers, namely data that deviates too far from other data in a data set. The existence of this outlier data will make the analysis of a series of data be biased or not reflect the actual phenomenon.

Studentized residual is the residual value that is standardized based on the mean and standard deviation if the absolute value of the studentized residual is more than 3, then the observation concerned is a univariate outlier. Based on the data contained in Table 5.19. Casewise Diagnostic dependent variable (Competitiveness) there are no univariate outliers because the absolute value of the studentized residual is not more than 3.

Hypothesis Test

Coefficient of Determination (R2)

The coefficient of determination (R2) in essence measures how far the model's ability to explain the variation in the dependent variable. A small R2 value means that the ability of the independent variables to explain the variation in the dependent variable is very limited (Ghozali, 2012: 97). R2 is equal to 0, so there is not the slightest percentage of the contribution of influence

that the independent variable has on the dependent variable, or the variation in the independent variable used in the model does not explain the slightest variation in the dependent variable.

On the other hand, R2 is equal to 1, so the percentage contribution of the influence given by the independent variable to the dependent variable is perfect, or the independent variables used in the model explain 100% of the dependent variables. From the results of the regression analysis, the output model summary is presented in Table 5.20., As follows:

Table 4.20: Result of Determination Analysis

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,860[a]	,739	,716	,845

a. Predictors: (Constant), X5, X2, X1, X3, X4

b. Dependent Variable: Y

Source: Processed Data, 2020

Based on the table above, the R2 (R Square) number is 0.739 or (73.9%). This shows that the percentage contribution of the influence of the independent variables (technical and managerial assistance, information sharing, trust, long-term relationships and process integration) to the dependent variable (competitiveness) is 73.9%. Or the variation of the independent variables used in the model (technical and managerial assistance, information sharing, trust, long-term relationships and process integration) is able to explain 73.9% of the variation in the dependent variable (competitiveness). While the remaining 26.1% is influenced or explained by other variables not included in this research model.

F Test

The F test uses a significant level of 5%, by comparing the calculated F value with the F value according to the Table, if the calculated F value is greater than the F Table value, then the regression model can be used to predict or in other words the model used is fit (Ghozali). , 2012: 98). The F test or regression coefficient test simultaneously is to determine the effect of the independent variable simultaneously on the dependent variable, whether the effect is significant or not (Priyatno, 2013: 48). From the regression analysis output, it can be seen that the F value is shown in Table 5.23. the following:

Table.4.21: Hasil Analisis Uji F

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	113,487	5	22,697	31,766	<,001[b]
	Residual	40,013	56	,715		
	Total	153,500	61			

a. Dependent Variable: Y

b. Predictors: (Constant), X5, X2, X1, X3, X4

Source: Processed Data, 2020

The steps for carrying out the F test are as follows:

1. Hypothesis,
Ho: b1 = b2 = b3 = b4 = 0, meaning that technical and managerial assistance, information sharing, trust, long-term relationships and simultaneous integration of processes have no effect on competitiveness.

Ha: b1 ≠ b2 ≠ b3 ≠ b4 ≠ 0, which means technical and managerial assistance, information sharing, trust, long-term relationships and integration of processes simultaneously affect competitiveness.
2. The level of significance using a = 5% (significance of 5% or 0.05 is a standard measure that is often used in research)
3. Based on the table, it is obtained that F count is 31.766
4. Using the 95% confidence level, a = 5%, the results are obtained for the F Table of 2.40 (See appendix)
5. Testing criteria: Ho is accepted if F count ≤ F Table, Ho is rejected if F count> F Table
6. Comparing F count with F Table: Value of F count> F Table (31,766> 2,40), then Ho is rejected.
7. Because F counts> F Table (31.766> 2.46), then Ho is rejected, the conclusion is that technical and managerial assistance, information sharing, trust, long-term relationships and integration of processes together have an effect on competitiveness.

Partial Regression Coefficient Test (t test)

The t test is used to determine whether in the regression model the independent variables (X1, X2,… ..Xn) partially have a significant effect on the dependent variable (Y). The t test uses a significant level of 5%, by comparing the t statistical value with the critical point according to the Table, if the t statistical value is higher than the t Table value, we accept an alternative hypothesis which states that an independent variable individually affects the dependent variable. Table 5.22. below describe the results of the t test for comparison with the t table in order to determine whether the independent variable individually affects the dependent variable.

Table 4.22 Result of t test analysis

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-6,828	1,622		-4,210	<,001
	X1	,262	,113	,236	2,313	,024
	X2	,403	,127	,282	3,173	,002
	X3	,499	,117	,404	4,249	<,001
	X4	,170	,125	,148	1,363	,178
	X5	,001	,052	,002	,018	,986

a. Dependent Variable: Y

Source: Processed Data, 2020

The steps for the t test are as follows:

1. Determine the Hypothesis: Ho: b = 0, there is no significant influence between the independent variables (technical and managerial assistance, information sharing, trust, long-term relationships and partial integration of processes) and the dependent variable (competitiveness)

   Ha: b1 ≠ 0, there is a significant influence between the independent variables (technical and managerial assistance, information sharing, trust, long-term relationships and partially integrated processes) and the dependent variable (competitiveness)
2. Determine the level of significance using a = 5%
3. Determine t count, based on the results of the t test.
4. Determine t Table, based on the attachment of the t table value distribution. The t distribution table is sought at a = 5%: 2 = 2.5% (2-tailed test) with degrees of freedom (df)
   n-k-1 (n is the number of respondents and k is the number of independent variables.
5. Testing criteria, Ho is accepted if t count ≤ t Table; Ho is rejected if t count> t Table.
6. Comparing t count with t Table.

Testing of Technical and Managerial Assistance Variable Regression Coefficients

Based on the results of the t test in the Table, the regression coefficient test for technical and managerial assistance variables is as follows:

1. Determine the Hypothesis:

Ho: b = 0, there is no significant effect between the independent variable (technical and managerial assistance) and the dependent variable (competitiveness)

Ha: b1 ≠ 0, there is a significant influence between the independent variable (technical and managerial assistance) and the dependent variable (competitiveness)

2. Determine the level of significance using a = 5%
3. Determine t count, based on the results of the t test. Based on the table, the t count is 2,313
4. Determine t Table, based on the attachment of the t table value distribution. The t distribution table is sought at a = 5%: 2 = 2.5% (2-tailed test) with degrees of freedom (df) 62-5-1 = 56 (n is the number of respondents and k is the number of independent variables.
5. Testing criteria, Ho is accepted if t count ≤ t Table; Ho is rejected if t count> t Table.
6. Comparing t count with t Table. Value -t count> -t Table (2, 313> 2.003) then Ho is rejected
7. Conclusion; Because the value of -t count> -t Table (2, 313> 2.003), Ho is rejected, meaning that partially there is a significant influence between technical and managerial assistance and competitiveness. So from this case it can be concluded that partially technical and managerial assistance has a significant effect on competitiveness.

Information Sharing Variable Regression Coefficient Testing

Based on the results of the t test in the Table, the regression coefficient testing for the Information Sharing variable is as follows

1. Determine the Hypothesis:

Ho: b = 0, there is no significant effect between the independent variable (Information Sharing) and the dependent variable (competitiveness)

Ha: b1 ≠ 0, there is a significant influence between the independent variable (Information Sharing) and the dependent variable (competitiveness)
2. Determine the level of significance using a = 5%
3. Determine t count, based on the results of the t test.
Based on the table, the t count is 3.173
4. Determine t Table, based on the attachment of the t table value distribution. The t distribution table is sought at a = 5%: 2 = 2.5% (2-tailed test) with degrees of freedom (df) 62-5-1 = 56 (n is the number of respondents and k is the number of independent variables.
5. Testing criteria, Ho is accepted if t count ≤ t Table; Ho is rejected if t count> t Table.
6. Comparing t count with t Table.
Value -t count> -t Table (3.173> 2.003) then Ho is rejected
7. Conclusion
Because the value of -t count> -t Table (3.173> 2.003), Ho is rejected, meaning that partially there is a significant influence between Information Sharing and competitiveness. So from this case it can be concluded that partially Information Sharing has a significant effect on competitiveness.

Testing the Trust Variable Regression Coefficient
Based on the results of the t test in the Table, the regression coefficient testing for the confidence variable is as follows:
1. Determine the Hypothesis:
Ho: b = 0, there is no significant effect between the independent variable (trust) and the dependent variable (competitiveness)
Ha: b1 ≠ 0, there is a significant influence between the independent variable (trust) and the dependent variable (competitiveness)
2. Determine the level of significance using a = 5%
3. Determine t count, based on the results of the t test. Based on the table, the t count is 4.249
4. Determine t Table, based on the attachment of the t table value distribution. The t distribution table is sought at a = 5%: 2 = 2.5% (2-tailed test) with degrees of freedom (df) 62-5-1 = 56 (n is the number of respondents and k is the number of independent variables.
5. Testing criteria, Ho is accepted if t count ≤ t Table; Ho is rejected if t count> t Table.
6. Comparing t count with t Table. Value -t count> -t Table (4,429> 2,003) then Ho is rejected
7. Conclusion; because the value of -t count> -t Table (4.429> 2.003), Ho is rejected, meaning that partially there is a significant influence between trust and competitiveness. So from this case it can be concluded that partially trust affects competitiveness.

Testing the Regression Coefficient of Long-Term Relationship Variables
Based on the results of the t test in the Table, the regression coefficient test for the long-term relationship variable is as follows:
1. Determine the Hypothesis:
Ho: b = 0, there is no significant effect between the independent variable (long-term relationship) and the dependent variable (competitiveness)
Ha: b1 ≠ 0, there is a significant influence between the independent variable (long-term relationship) and the dependent variable (competitiveness)
2. Determine the level of significance using a = 5%
3. Determine t count, based on the results of the t test.
Based on the table, it is obtained t count of 1.363

4. Determine t Table, based on the attachment of the t table value distribution. The t distribution table is sought at a = 5%: 2 = 2.5% (2-tailed test) with degrees of freedom (df) 62-5-1 = 56 (n is the number of respondents and k is the number of independent variables.
5. Testing criteria, Ho is accepted if t count ≤ t Table; Ho is rejected if t count> t Table.
6. Comparing t count with t Table.
Value -t count> -t Table (1.363 <2.003) then Ho is accepted
7 Conclusion
Because the value of -t <-t Table (1.363> 2.003), Ho is accepted, meaning that partially there is no significant effect between the long-term relationship with competitiveness. So from this case it can be concluded that partially the long-term relationship has no significant effect on competitiveness.

Testing the Regression Coefficient of Process Integration Variables
Based on the results of the t test in the Table, the regression coefficient testing of the process integration variable is as follows:
1. Determine the Hypothesis:
Ho: b = 0, there is no significant effect between the independent variable (process integration) and the dependent variable (competitiveness)
Ha: b1 ≠ 0, there is a significant influence between the independent variable (process integration) and the dependent variable (competitiveness)
2. Determine the level of significance using a = 5%
3. Determine t count, based on the results of the t test.
Based on the table, it is obtained t count of 0.018
4. Determine t Table, based on the attachment of the t table value distribution. The t distribution table is sought at a = 5%: 2 = 2.5% (2-tailed test) with degrees of freedom (df) 62-5-1 = 56 (n is the number of respondents and k is the number of independent variables.
5. Testing criteria, Ho is accepted if t count ≤ t Table; Ho is rejected if t count> t Table.
6. Comparing t count with t Table.
Value -t count> -t Table (0.018 <2.003) then Ho is accepted
7 Conclusion
Because the value of -t <-t Table (0.018> 2.003), Ho is accepted, meaning that partially there is no significant effect between process integration and competitiveness. So from this case it can be concluded that partially process integration has no significant effect on competitiveness.

DISCUSSION

The Effect of Technical and Managerial Assistance Variables on Competitiveness

Based on the results of t-test research on the variable of technical and managerial assistance on competitiveness, it was obtained the value of -t count> -t Table (2, 313> 2.003), so Ho was rejected, meaning that partially there was a significant influence between technical and managerial assistance and competitiveness. So from these results it can be concluded that partially technical and managerial assistance has a significant effect on competitiveness. This is in line with Pujawan (2005: 7) who says that in the supply chain, factories need to provide technical and managerial assistance to their suppliers because in the end this will create a competitive ability for the entire supply chain.

Dahuri (2012) conveyed a similar thing that in order to improve the quality of human resources for national fishermen to be competitive, it is necessary to provide education, training and counseling on fishing techniques, financial management, environmental management, and work ethics including achievement and motivation on an ongoing basis. Rinda Novianty et al (2015) in the results of her research on Fishermen's Self-Capacity Development in the Context of Sustainable Capture Fisheries Development at PPN Pelabuhan Ratu also stated that the key indicators for developing self-capacity and fishermen's ethics are knowledge, competence, mental, commitment and understanding of laws. which can be the basis for developing bottom-up fisher community empowerment programs, namely cooperative fisheries management between the government, fishermen (main business actors and partners) and related stakeholders in making decisions before transforming into independent fishermen. Furthermore, it is said that the key indicators of internal factors are formal education and work ethic. Meanwhile, the key indicators for external factors are understanding of laws and regulations, extension services, and the existence of cooperatives. These key aspects of internal and external factors form the basis for supporting aspects in making policies for the development of fishermen's self-capacity, which are independent, competitive and well-established through the development of a special education and training system for fishermen's capacity building and extension services with materials that are in accordance with the characteristics and fishermen's needs.

Kusumastanto and Wahyudin (2012) also state that fishermen development through counseling is the spearhead of national fisheries development, among others through strengthening and fostering coastal communities to increase knowledge and skills related to fishing business so that they have high bargaining power.

Pujawan (2005: 7) states that supply chain management is not only oriented to the internal affairs of a company, but also external affairs related to relationships with partner companies. Furthermore, it said why coordination and collaboration between companies in the supply chain is needed, because in essence these companies want to satisfy the same end customers so that this network must work together to make cheap products, deliver on time with good quality. According to Pujawan, the spirit of collaboration and coordination is also based on the awareness that the strength of the supply chain depends on the strength of all the elements in it. A healthy and efficient factory will mean little if its suppliers are unable to produce quality raw materials or are unable to deliver on time. So it is said that in the supply chain the factory needs to provide technical and managerial assistance to its suppliers because in the end this will create an overall competitive ability.

The Effect of Information Sharing on Competitiveness

Based on the research results of the t test of the information sharing variable on competitiveness, the value of t count> t Table (3.173> 2.003) is obtained, so Ho is rejected, meaning that partially there is a significant effect between Information Sharing and competitiveness. . So it can be concluded that partially Information Sharing has a significant effect on competitiveness. The positive value obtained means that if there is an increase in information sharing, competitiveness will increase and vice versa if there is a decrease in information sharing, competitiveness will decrease.

In a supply chain, there are 3 night flows that must be managed, namely the flow of goods, the flow of money and the flow of information. Handfield and Nicholas in Susilo (2008) state that inaccurate or distorted information at each level of the supply chain from bottom to top can cause several important problems, including: 1) Excessive inventory, 2) Loss of income, 3) Decreased levels customer satisfaction, 4) ineffective delivery, 5) errors in production scheduling, 6) inefficient use of resources. All of this can lead to a decrease in competitiveness. Conversely, it means that if information sharing increases, it can increase competitiveness.

Information Sharing is the intensity and capacity of companies in their interactions to share information with partners regarding joint business strategies. Information Sharing also allows supply chain members to obtain, maintain, and convey the information needed to ensure effective decision making, and is a factor that can strengthen the collaboration elements as a whole, therefore industry bottlenecks can be reduced by Information Sharing (Simatupang & Sridharan in Yaqoub, 2012).

Omar et al (2010: 2487) state that information sharing is related to the distribution of useful information between people, systems or organizations in an open environment. Meanwhile, according to Hsu et al (2008: 298) sharing information in the context of the supply chain refers to the extent to which important information and / or exclusive information is available to members of the supply chain. Information sharing is used to provide benefits to all elements involved in supply chain management and long-term benefits to all parties involved in the supply chain through information sharing.

The results of this study support several previous studies conducted, among others, by Sera Maya Santi (2018) which states that supply chain management has an influence on competitive advantage where supply chain management indicators include information sharing. Regina Suharto and Devie (2013) also in their research entitled Analysis of the Effect of Supply Chain Management on Competitive Advantage and Company Performance, stated that the supply chain management variable has a significant relationship to competitive advantage where the supply chain management variable measured is information sharing. In line with their research, Andi Maddeppungeng (2017) in his research entitled The Effect of Supply Chain Management (MRP) on Competitiveness and Performance of Construction Service Companies in DKI-Jakarta also proves that supply chain management affects the competitiveness of companies. Good company performance can also increase the company's competitiveness.

According to Yu, et al. (2001), with the exchange of information in the supply chain, helping companies to improve inventory levels and make cost savings. Fawcett, et al (2007) explained that information sharing is very important in designing supply chain management. This is because information can solve problems in inventory, design time for new products, shorten order cycles, reengineer processes, and manage supply chains.

The success of the Supply Chain really depends on the information system, with the information on business partners in the supply chain that can be calculated (Pujawan and Mahendrawathi, 2010). According to Chopra and Meindl in Mahardika 2014, information must have several characteristics in order to be useful in making supply chain decisions: 1). Be accurate. In order to make good decisions, information must be true and reliable. 2). Right. Consider what information

is appropriate and needed by the company. 3). Can be accessed when needed. In order to be used when needed, information must be properly and correctly accessible, so that it can assist in making decisions.

The Effect of Trust on Competitiveness

Based on the results of research with a partial test, the value of t count> t Table (4.429> 2.003), so Ho is rejected, meaning that partially there is a significant effect between trust and competitiveness. So it is concluded that partially trust affects competitiveness.

In managing the supply chain, trust is very important in an effective and efficient supply chain (Heizer & Render, 2004). Trust is a willingness to take risks (and willingness to depend on an exchange partner where someone has self-confidence. Trust refers to the extent to which supply chain partners perceive each other as credible and benevolent partners (Salam, 2017). Trust is defined as a the attitude that one party's needs will be met in the future by actions undertaken by the other (Dash & Bruning, 2007). Trust is mentioned in various collaborative relationship studies as a determining variable for the success and quality of long-term relationships (Jonsson & Zineldin, 2003).

According to Donni Juni (2017, p.118) trust is built on a number of characteristics. The various characteristics relating to belief are as follows: 1). Keep the relationship. Consumers who believe in always maintaining a good relationship between themselves and the company because they realize that a good relationship will have a beneficial impact on themselves. 2). Receiving Influence Consumers who have high trust will be easily influenced so that the company / marketing costs for marketing programs become cheaper. 3). Open in Communication Consumers who have high trust in the company will provide constructive information for the company so that the flow of information is not choked up. 4). Reducing Surveillance. Consumers who believe usually rarely criticize so that they reduce their supervisory function of the company / marketer. 5). Patience Believing consumers will have more patience than ordinary consumers. 6). Providing Defense. Consumers who believe in defending the company / marketer when the product they consume is criticized by competitors or other users. 7). Giving Positive Information. Trusting consumers will always provide positive and constructive information for the company. 8). Accept Risk. A believing consumer will accept any risk when he decides to use a product produced by the company. 9). Convenience Consumers who believe in making purchases repeatedly because they believe that the company / marketer gives them the convenience of consuming products in the short and long term. 10). Satisfaction Consumers who believe will be easier to give satisfaction than consumers who do not believe.

The results of this study support research conducted by Anderson and Narus (1990) who see trust as a belief that will provide positive results for organizations. Moorman et al. (1993) describe trust as a positive belief or expectation obtained through exchanges with partners in a supply chain system. Kwon and Taewon (2004) state that success in company performance (operation performance) in the supply chain also comes from the high value of trust and strong commitment between partners in the supply chain. One of the most important things for each company to have in a supply chain network is trust between organizations (Chopra and Meindl, 2007).

The Effect of Long-Term Relationships on Competitiveness

Based on the partial test results of the variable long-term relationship to competitiveness, the value-t count <-t Table (1.363> 2.003) is obtained, so Ho is accepted, meaning that partially there is no significant effect between the long-term relationship with competitiveness. So the results of the study concluded that partially the long-term relationship has no significant effect on competitiveness.

Competitive conditions in the business world, are becoming increasingly unstable, causing companies to be ready and able to anticipate things that can threaten the sustainability of the company's activities. Tate et. Al (2013) argues that the way businesses can deal with these conditions is to properly manage the supply chain flow related to the business starting from upstream (downstream) and downstream (upstream), an effective step that can be taken is to carry out long-term business relationships. in the supply chain, especially in the performance of supplier and buyer relationships. Because in this way it can result in small business risks so that it can minimize costs that must be incurred due to business activities, which causes profitability to increase.Menurut Indrajit dan Djokopranoto (2006) terdapat prinsip yang harus dibangun oleh masing masing pelaku supply chain seperti pemasok dan pembeli supaya dapat mencapai long term relationship, diantaranya adalah , tujuan yang sama, saling menguntungkan, saling mempercayai, bersifat terbuka dan melakukan perbaikan dalam mutu dan harga/biaya secara berkesinambungan.

Handfield et.al (2011) explain that there are several advantages between supplier and buyer relationships if a long-term relationship can be established. These advantages include, assurance of supply, access to technology used by suppliers (access to supplier technology), access to cost / price information (access to cost / price information), impact on volume (volume leveraging), suppliers. receiving better information in preparation (supplier receives better information for planning).

Ganesan in Indriani (2006) defines a long-term relationship as the perception of the interdependence of a supplier on a supplier either in the context of a product or a relationship that is expected to bring benefits to buyers in the long term. Relationships between suppliers, customers, and companies must be well managed and always improved so that a sustainable relationship is established and suppliers are responsible for product quality and so that the distribution of products from upstream to downstream is timely to the end users. So the improvement of good relationships in the long term and mutual trust between the company, suppliers and customers are needed in order to achieve efficiency in company performance (Rahmasari, 2011).

In principle, the ultimate goal to be achieved in managing long-term relationships is the profitability of the company that is obtained through continuous and mutually beneficial relationships so as to create consistent and sustainable long-term relationships (Triastity, 2010). According to Rahadi (2012), in implementing Supply Chain Management (SCM), companies aim to increase competitiveness which is manifested in improving operational performance.

The results of this study are different from the results of research conducted by Ariani (2013) which states that long-term relationships have a significant effect on company performance and

also research conducted by and Rahadi (2012) which states that long-term relationships have an effect on company operational performance. Also research conducted by Fitrianto and Sudaryanto (2016) which states that Long Term Relationship has a positive and significant effect on outlet operational performance. The better the Long Term Relationship between the cellphone counter and the distributor, the better the outlet operational performance. However, the results of this study have similarities with the results of Rachbini's (2016) study which states that there is no influence between long-term relationships and company performance. The research results obtained are understandable because for capture fisheries where the catch cannot be ascertained both in terms of time and quantity of fish and the certainty of the sustainability of the supplier's business so it is difficult for companies or suppliers to guarantee long-term relationships.

Effect of Process Integration on Competitiveness

Based on the results of the partial test, the value of t count <t Table (0.018 <2.003) is obtained, so Ho is accepted, meaning that partially there is no significant effect between process integration and competitiveness. So it can be concluded that partially process integration has no significant effect on competitiveness.

Integration in the supply chain shows a complex process of cooperation between companies and suppliers and buyers which, if managed, can increase efficiency in company operations and can further increase company profits and provide satisfaction for all parties (Cousineau et al in Setiawan and Rahardian, 2005). However, this concept does not apply to capture fishermen in North Minahasa District because they generally do not have access to the planning system. According to Gimenez et. Al (2011) that the integration process that has been carried out correctly by the company has a positive influence on the performance of the company's supply chain management. So when the integration process of the company is running optimally, it is certain that the supply chain performance of the company will increase. Research by Huang et. Al (2014) shows that process integration has significant results and has a positive effect on supply chain management performance. This study reveals that a good process integration in business will minimize the risk of uncertainty that will be experienced by businesses.

Integration can improve relationships in each supply chain, facilitate decision making, value creation and information from upstream to downstream, namely consumers. Integration in the supply chain shows a very complex collaborative relationship between parties in the supply chain which, if managed properly, will increase efficiency and effectiveness in the production process in order to increase company profits and satisfy consumers (Cousineau in Majid Dan Dwiyanto, 2017).

An integration must be achieved by organizations or companies involved in Supply Chain Management and all suppliers of material procurement. The purpose of Supply Chain Management is to integrate all of the company's operational processes from upstream (upstreams) and downstream (downstreams) to end users, through the provision of products, information and services in order to increase added value for consumers and other stakeholders (Setiawan and Rahardian in Hakim, 2018). There are several stages to achieve an integrated SCM system, in the development from logistics management to Supply Chain management according to (Indrajit and Djokopranoto in Ariani, 2013), consisting of several stages, namely:

1. Stage 1: Baseline. At this stage the production function and logistics function are still carrying out separate and separate activities. The production department does not think about existing inventory, lack of inventory or accumulated inventory, because the production department is only in charge of producing a product according to a predetermined quality.
2. Stage 2: Functional integration (Functional Integration). Combining functions that have almost the same activity or adjacent functions begins to be considered at this stage, because in this case the integration process has begun to be considered.
3. Stage 3: Internal Integration (Internal Integration). All related functions within an organization or company require an internal integration process to carry out framework planning and supervision.
4. Stage 4: Integration externally. This is the final stage and the actual stage of Supply Chain Integration, because this stage continues from the planning and supervision stages (Internal Integration), namely upstream (Upstreams) and downstream (Downstreams), to customers.

CONCLUSIONS AND SUGGESTIONS

Conclusion

Based on the research results, the following conclusions can be drawn:

1. Technical and managerial assistance has a significant effect on the competitiveness of coastal fishing communities in North Minahasa Regency
2. Information Sharing has a significant effect on the competitiveness of coastal fishing communities in North Minahasa Regency
3. Trust has a significant effect on the competitiveness of coastal fishing communities in North Minahasa Regency
4. Long-term relationship does not have a significant effect on the competitiveness of coastal fishing communities in North Minahasa Regency
5. Process integration has no significant effect on the competitiveness of coastal fishing communities in North Minahasa Regency

Suggestion

Based on the conclusion, it is suggested as follows:

1. Companies involved in the capture fisheries supply chain in North Minahasa District need to provide technical and managerial assistance in the form of training and assistance related to knowledge and skills regarding more advanced and modern fishing gear, about sustainable capture fisheries, and or help provide / lend / sell fishing tools that are more advanced and modern, as well as provide training and assistance in business management. The company together with the banking sector and the government are working together to initiate the fishing community to gain access to capital. And together with the Government, the company can initiate the formation of cooperatives or fishermen groups to achieve economies of scale. With knowledge and skills, the use of more modern fishing tools and aids, understanding and ability of business management, access to capital and catches on an economical scale, it is hoped that it can help fishermen have competitiveness so that it will be very helpful in ensuring overall competitiveness. supply chain.
2. Information sharing has a significant effect on the competitiveness of coastal fishing communities in North Minahasa Regency who are involved as suppliers for processing

companies. So far, the information given to fishermen is limited to the price of fish that has been set by the company and also information that the company will not accept fish from the supplier because the stock has been fulfilled. The success of a supply chain depends very much on the information, so it is recommended that companies build an e-procurement information system through a B2B Private Exchange with suppliers (One Buyer, Many Sellers).

3. Trust has a significant effect on the competitiveness of coastal fishing communities in North Minahasa Regency. The company's trust in fishing communities as a supplier of fish raw materials is very helpful for fishermen in sales activities, so it is suggested that good etiquette from the company can be maintained, and it is hoped that it will be further enhanced for long-term relationships.
4. Long-term relationship does not have a significant effect on the competitiveness of coastal fishing communities in North Minahasa Regency. This is because the length of time the fishermen have a relationship with the company does not guarantee a commitment or cooperation agreement between the processing company and the fishermen as suppliers. So that if the fishermen do not supply in the future, it will not be a problem for the company. On the other hand, fishermen do not have the obligation to supply. On the one hand, it is beneficial for both parties because there is no obligatory bond, but for long-term business sustainability it will be a problem because it does not have a long-term relationship in the form of a commitment or agreement between processing companies and suppliers, namely fishermen. The relationship is still limited to trust in fishermen for the fish that is supplied, so it is suggested that the company can build a long-term commitment or agreement that will bring competitiveness not only to the supplier but also to the entire supply chain.
5. Process integration has no significant effect on the competitiveness of coastal fishing communities in North Minahasa Regency. So far, fishermen have not been involved in the planning process so that the integration of the process has no effect on competitiveness. Fishermen do not understand the importance of process integration in the supply chain management concept for business continuity. So it is recommended for the Government, especially DKP, to provide training on the concept of supply chain management, including those related to process integration for fishermen. Whereas for companies to be able to form an e-scm information system to activate the integration process because a good SCM can increase the ability to compete for the supply chain as a whole but does not cause one party to make sacrifices in the long term (Pujawan, 2005: 7)

References

Anatan, L dan Ellitan, L. 2008. Supply Chain Management Teori dan Aplikasi.Bandung:Alfabeta

Anderson JC, Narus JA. 1990. A model of distributor relationships. Journal of Marketing 54(1): 42–58. https://doi.org/10.2307/1252172

Ariani, D. (2013). Analisis Pengaruh Supply Chain Management Terhadap Kinerja Perusahaan (Studi Pada Industri Kecil dan Menengah Makanan Olahan Khas Padang Sumatera Barat). Jurnal Studi Manajemen & Organisasi, 10(2), 132–141.

Bernard, S. F. (2011). Analisis Pengaruh Faktor-Faktor Kualitas Hubungan Terhadap Kinerja Rantai Pasokan (studi kasus pada PT. Industri Jamu Cap Jago Semarang)

Bujang. 2007. "Pengujian Faktor-Faktor Yang Mempengaruhi Trust Dan Komitmen Dalam Hubungan Antara Pemasok Dan Perusahaan". Jurnal Optimal. Vol 1, No. 1.

Chopra, S., & Meindl, P. (2004). *Supply Chain Management: Strategy, Planning, and Operations*. Second Edition. *Pearson Education International*.

Chopra, S. and Meindl, P. (2007). Supply Chain Management: Strategy, Planning and Operasion, 2nd or 3rd Edition. New Jersey: Pearson Prentice Hall.

Chopra, S., 2007, Supply Chain Management: Strategy, Planning, and Operation, Pearson Prentice Hall, New Jersey

Dahuri, R. 2012b. Membangun Perikanan Tangkap yang Adil dan Berkelanjutan. http:// rokhmindahuri.info/2012/01/26/membangun-perikanan-tangkap-yang-efisien-berdaya-saing-berkeadilan-dan-berkelanjutan

DanangSunyoto. 2015. KeunggulanBersaing, Competitive Advantage. Jakarta. CAPS (Center for Academic Publishing Servive)

Doney, P. M., and Cannon, J. P. (1997). An examination of the nature of trust in buyerseller

relationships. Journal of Marketing awcett S. E., Osterhaus P., Magnan G., Brau J. C. and Mc Carter M. W., (2007) "Information

sharing and supply chain performance: the role of connectivity and willingness", Journal of Supply Chain Management, Vol. 12, No. 5, pp. 358-368.

Fitrianto, A.Y dan Sudaryanto, Budi. 2016. Pengaruh Supply Chain Management Terhadap Kinerja Operasional Outlet (Studi Pada Counter Handphone yang terdaftar di PT. Multikom Indonesia Cabang Semarang). DIPONEGORO JOURNAL OF MANAGEMENT Volume 5, Nomor 2, Tahun 2016, Halaman 1-11 http://ejournal-s1.undip.ac.id/index.php/dbr ISSN (Online): 2337-3792

Ferlando, Prakoso Yoga. (2016). Pengaruh Trust Dan Information Sharing Terhadap Relationship

Commitment Pada Supply Chain Management. Skripsi. Surakarta: UNS.

Ganesan, Shankar, 1994, "Determinants of Long-Term Orientation in Buyer-Seller Relationship", Journal of Marketing, Vol. 58, April, hlm. 1-19

Guritno dan Harsasi. 2014. Modul Pengantar Manajemen Rantai Pasok.

Guritno, A. D. dan M. Harsasi. 2013. Manajemen Rantai Pasok (Supply Chain Management). Jakarta: Penerbit Universitas Terbuka.

Harrison A and van Hoek, R.,(2008), Logistics Management and Strategy 3th edition,Harlow, England:Pearson Education, first published in 2002.

Heizer, J., & Render, B. (2005). *Operations Management.* 7th edition. Pearson Education International.

Heizer, Jay dan Barry Render. 2009. Manajemen Operasi Buku 2 Edisi 9. Jakarta: Salemba Empat.

Heizer, Jay dan Barry Render, 2015, *Manajemen Operasi- Manajemen Keberlangsungan dan Rantai Pasokan*. Edisi 11. Jakarta : Salemba Empat

Indrajit R.E dan Djokopranoto.2002, *Konsep Manajemen Supply chain*.Grasindo. Jakarta

Indrajit, R. E., & Djokopranoto, R. (2003). Manajemen Persediaan, Barang Umum dan Suku Cadang Untuk Pemeliharaan dan Operasi. Jakarta: Grasindo.

Indrajit R.E dan Djokopranoto,2005, *Strategi Manajemen Pembelian dan.Supply chain,* Grasindo. Jakarta

Indriani, Niken Kusuma. 2006. "Analisis Pengaruh Kepercayaan Outlet Ritel Pada Pemasoknya Untuk Mencapai Hubungan Jangka Panjang ". Tesis. Semarang: Magister Program Studi Pasca Sarjana Universitas Diponegoro.

Irmawati (2007). Pengaruh Manajemen Rantai Pasokan Terhadap Kinerja Di PTPN VIII

Gunung Mas Bogor. Jurnal Manajemen.

Kurniawan dan Kusumawardhani. 2017. Pengaruh Supply Chain Management Terhadap Kinerja UMKM Batik di Pekalongan. DIPONEGORO JOURNAL OF MANAGEMENT *Volume 6, Nomor 4, Tahun 2017, Halaman 1-1http://ejournal-s1.undip.ac.id/index.php/dbr ISSN (Online): 2337-3792*

Kwon IWG, Taewon S. 2004. Factors affecting the level of kepercayaan and commitment in supply chain relationships. Journal of Supply Chain Management 40(1): 4–14. https://doi. org/10.1111/j.1745-493X.2004.tb00165.x.

Levi, David Simchi, Philip Kaminsky, dan Edith Simchi Levi, 2000, *Designing and Managing The Supply Chain: Concepts, Strategies and Case Studies*, Singapore, Mac Grawhill.

Mandasari,M dan Widiartanto. Pengaruh Onformation Sharing, Knowledge Sharing dan Relation Terhadap Performance Perusahaan https://media.neliti.com/media/publications/137183-ID-pengaruh-information-sharing knowledge-s.pdf

Miguel, P.L.S., dan Ledur Brito, L.A. 2011. "Supply Chain Management measurement and its

influence on Operational Performance". Journal of operations and supply chain

management . Vol 4, No.2.

Moorman C, Deshpande R, Zaltman G. 1993. Factors affecting kepercayaan in market esearch relationships. Journal of Marketing 57: 81–101. https://doi. org/10.2307/1252059

Mudrajad Kuncoro, (2013). "Metode Riset untuk Bisnis dan Ekonomi" Edisi 4. Jakarta: Erlangga.

Panayides, P. M., & Venus Lun, Y. H. (2009). The impact of trust on innovativeness and supply chain performance. International Journal of Production Economics, 122(1), 35–46.

Parwati, I dan Andrianto, P. (2009). Metode Supply Chain Management Untuk Menganalisis Bullwhip Effect Guna Meningkatkan Efektivitas Sistem Distribusi Produk. Jurnal Teknologi, Vol. 2(1), pp. 47-52.

Pembinaan Nelayan Sebagai Ujung Tombak Pembangunan Perikanan Nasional. Manuskrip pada Majalah Ilmiah WAWASAN TRIDHARMA. Agustus 2012.

Porter, M.E., (1993). *Keunggulan Bersaing Menciptakan dan Mempertahankan Kinerja Unggul*. Erlangga, Jakarta.

Pujawan I Nyoman. 2005. Supply Chain Management. Edisi Pertama. Guna Widya. Surabaya.

Pujawan, I Nyoman dan Mahendrawathi ER. 2010. Supply Chain Management. Edisi 2.

Surabaya: Guna Widya.

Rahadi (2012) dalam disertasinya yang berjudul "Pengaruh Supply Chain Management Terhadap Kinerja Operasional Perusahaan UKM di Palembang

Rahmasari, Lisda. (2011). Pengaruh Supply Chain Management Terhadap Kinerja Perusahaan dan Keunggulan Bersaing (Studi Kasus pada Industri Kreatif di Provinsi Jawa Tengah). Majalah Ilmiah Informatika, Vol. 2 No. 3, Hal. 89-103.

Rianto, D. 2012. "Pengaruh Supply Chain Management Terhadap Kinerja Operasional Perusahaan". Proceeding Seminar Sistem Produksi X.

Ryu I, So S, Koo C. 2009. The role of partnership in supply chain performance. Industrial Management and Data Systems 109(4): 496–514.https://doi.org/10.1108/02635570910948632

Santoso, singgih. 2014. Statistik Parametrik Edisi Revisi. Jakarta : Elex Media Komputindo.

Anwar Sanusi, 2011, Metode Penelitian Bisnis, Salemba Empat, Jakarta

Simatupang, T.M. & Sridharan, R. (2008). Design For Supply Chain Collaboration. Business

Process Management Journal, 14(3): 401-418.

Simchi, D., 2003, *Designing and Managing The SupplyChain,* Mac Grawhill.

Simchi-Levi, David., Philip Kaminsky, dan Simchi-Levi. (2009). Designing and Managing the

Supply Chain: Concepts, Strategies and Case Studies. Edisi 3. New York: Mcgraw-Hill

Suharto, R. dan Devie, 2013, Analisa Pengaruh Supply Chain Management terhadap Keunggulan Kompetitif dan Kinerja Perusahaan, *Business Accounting Review*, Vol 1, No 2.

Suhong, Li., Subba Rao, S., Ragu-Nathan, T.S., & Ragu-Nathan B. (2005). Development and Validation of a Management instrument for Studying Supply Chain Management Practices. Journal of Operations Management, Vol. 23, pp. 618-641. http://dx.doi.org/10.1016/j.jom.2005.01.002

Sugiyono. (2017). Metode Penelitian Kuantitatif, Kualitatif, dan R&D. Bandung : Alfabeta, CV.

Sundayana, R. (2016). Statistika Penelitian Pendidikan. Bandung: Alfabeta.

Susilo, Tri. 2008. Analisa Bullwhip Effect Pada Supply Chain (Studi Kasus PT. Istana Cipta Sembada Sidoarjo). Jurnal Penelitian Ilmu Teknik Vol 8 No. 2 Desember.

Yaqoub, M Amak. 2012. "Pengaruh Mediasi kepercayaan Pada Hubungan Antara Kolaborasi Supply Chain Dan Kinerja Operasi". Jurnal Manajemen & Kewirausahaan. Vol 14, No. 2.

Zailani, S., & Rajagopal, P. (2005). Supply chain integration and performance: US versus East

Asian companies. Supply Chain Management: An International Journal, 10(5), 379–393.

https://id.wiktionary.org/wiki/bantuan_teknis

https://lektur.id/arti-bantuan-teknis

https://ekonomi.bisnis.com/read/20201111/98/1316517/logistik-perikanan-masih-jadi-tantangan