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Analytical Study of Information Systems In Fish Auction Production

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Abstract
The information system in fish auction production has an important role in managing the entire process from collecting fish from fishermen, storing it, to auctioning it to buyers. This research was carried out using library research, which is research whose objects are searched for using various library information such as books, scientific journals, magazines, newspapers and documents. The research results show that the components of the information system in fish auction production are: 1). Data Collection: The information system can contain features to record fish data obtained from fishermen, such as type of fish, weight, time and location of catch, and general condition of the fish. 2). Stock Monitoring: The system can provide direct monitoring of fish stocks available in storage. 3). Storage Management: The system can assist in managing fish storage. 4). Auction Planning: Based on stock data and market demand, the system can help in planning fish auctions optimally. 5). Online Auctions: in today's digital era, information systems can provide a platform for conducting online auctions. 6). Delivery Tracking: The system can provide a tracking feature to follow fish deliveries to buyers, thereby ensuring the safety and quality of the fish is maintained during the delivery process. 7). Data Analysis: Data collected from the entire production and auction process can be analyzed to provide valuable insights and 8). Payment Management: The system can facilitate the payment process for buyers and fishermen, including recording transactions and payments online.

Keywords:
Analysis Study
Information System
Fish Auction

Abstrak
Sistem informasi dalam produksi pelelangan ikan memiliki peran penting dalam mengelola seluruh proses dari mulai pengumpulan ikan dari nelayan, penyimpanan, hingga pelelangan kepada pembeli. Penelitian ini dilakukan dengan menggunakan penelitian pustaka (library research) merupakan penelitian yang objeknya dicari dengan berbagai informasi pustaka seperti buku, jurnal ilmiah, majalah, koran, dan dokumen. Hasil penelitian menunjukkan bahwa, komponen pada sistem informasi dalam produksi pelelangan ikan, yaitu: 1). Pengumpulan Data: Sistem informasi dapat memuat fitur untuk mencatat data ikan yang diperoleh dari nelayan, seperti jenis ikan, berat, waktu dan lokasi penangkapan, dan kondisi umum ikan. 2). Pemantauan Stok: Sistem dapat memberikan pemantauan langsung terhadap stok ikan yang tersedia dalam penyimpanan. 3). Manajemen Penyimpanan: Sistem dapat membantu dalam mengatur penyimpanan ikan 4). Perencanaan Pelelangan: Berdasarkan data stok dan permintaan pasar, sistem dapat membantu dalam merencanakan pelelangan ikan secara optimal. 5). Pelelangan Online: di era digital saat ini, sistem informasi dapat menyediakan platform untuk melakukan pelelangan secara online. 6). Pelacakan Pengiriman: Sistem dapat memberikan fitur pelacakan untuk mengikuti pengiriman ikan kepada pembeli, sehingga memastikan keamanan dan kualitas ikan yang terjaga selama proses pengiriman. 7). Analisis Data: Data yang terkumpul dari seluruh proses produksi dan pelelangan dapat dianalisis untuk memberikan wawasan yang berharga dan 8). Manajemen Pembayaran: Sistem dapat memudahkan proses pembayaran bagi pembeli dan nelayan, termasuk pencatatan transaksi dan pembayaran secara online.

Kata Kunci : Studi Analisis, Sistem Informasi, Pelelangan Ikan

INTRODUCTION

Every region in Indonesia has many natural resources including fish production, one of which is sea fish. From these natural resources, many fishermen make it their profession, namely catching fish. The caught fish will be sold at the TPI (Fish Auction Place), then they will be weighed and rewarded according to the fish price standards in effect at that time. In distribution circuits, manufacturers often

use intermediaries, distributors, who are autonomous operations between producers and final consumers. This is because fish takes many paths before reaching the final consumer, the longer the path, the more the price of the fish will influence consumers (Ramadhan, *et al* ., 2023: 90).

Technological advances are currently growing rapidly, especially computer-based technology. Advances in the field of technology have caused many business sectors to take part in advancing their businesses into computer technology in the hope that it can help entrepreneurs to predict future conditions or needs so that entrepreneurs can advance their businesses. With these interests, a high quality and timely system is needed.

Current mobile applications cannot be separated from the use of notifications. The large number of types of mobile devices used by users means that it is important to use a method to create notifications that can run on all types of devices. It cannot be denied that the growth of smartphone users in the world, especially in Indonesia, is increasingly rapid. *Smartphones* have become part of people's lifestyle in Indonesia, especially for young people and the upper middle class (Nuraminudin, 2020: 209-210).

Computer-based data processing has developed so that many organizations, schools and agencies utilize information technology to support work effectiveness and efficiency. The Technical Implementation Unit for Fish Auction Places (UPT TPI) is a form of business which has the task of carrying out some of the operational and technical activities supporting development in the field handled. Where the existing system is, currently the fish production data recapitulation process is still less efficient because it uses the MS Excel application which still often causes data overlap, the data recap process takes a long time and reports are not appropriate due to the absence of a database system that stores and archives each recapitulation report. . Therefore, a new system is urgently needed which aims to overcome this problem. The new system created has been proven to be able to overcome recapitulation problems, starting from ship data, fish weighed data and providing recapitulation reports every month and year (Honainah, 2016: 33).

According to Ramadhan and friends, citing the opinion of Utami (2014), namely that the Fish Auction (TPI) is one of the main functions of fisheries and one of the factors driving and increasing the business and welfare of fishermen. The existence of fish auctions and all their activities has many implications for entrepreneurs and TPI management bodies. The relationship between catchers and collectors and between traders and TPI managers is very good, but the problem is the absence of collectors or intermediaries in the auction system or mechanism (Ramadhan, *et al* ., 2023: 91).

Based on Law of the Republic of Indonesia no. 45 of 2009 concerning Fishing Ports, the function of fishing ports is as a community service center in relation to fisheries moorings, fish landings, fish distribution marketing, implementation of quality development, streamlining fisheries operational activities, and implementation of harbormasters. In its function according to the Decree of the Minister of Maritime Affairs and Fisheries of the Republic of Indonesia No. 10 of 2004, ports are a place for community services. The Directorate General of Capture Fisheries groups fishing ports into 4 (four) types according to port type criteria (Lubis, 2000). The port grouping consists of Ocean Fishing Ports (A), Nusantara Fishing Ports (B), Coastal Fishing Ports (C), and Fish Landing Bases (D) (Lubis, 2000: 45).

So, according to the author, the importance of information systems in fish auction production is very important for various reasons, namely for 1). **Operational Efficiency** , 2). **Inventory Management** , 3). **Quality Improvement** , 4). **Transparency and Security** and 5). **Decision Optimization** . With data collected and analyzed by information systems, decision makers can gain better insight into planning and managing fish auction production. This information can be used to identify market trends, optimize prices, and plan more effective marketing strategies.

METHODS

This research was carried out using library research, which is research whose objects are searched for using various library information such as books, scientific journals, magazines, newspapers and documents . If researchers do not have their own reading sources, they can look in libraries, both formal institutional libraries and private libraries. This library research is also research carried out in libraries or other places as long as there are relevant reading sources. Good reading sources must meet three criteria, namely relevance, completeness and up-to-dateness (except historical research, this research actually uses old reading sources). Relevance is related to the match between the variables studied and the theory put forward, completeness is related to the number of sources read, up to date is related to the time dimension. The newer the source used, the more up-to-date the theory will be (Sugiyono, 2013: 66).

Data management in this research is an important step for organizing, analyzing, and understanding the information collected during the research. The following are several data management techniques that the author applies in this research, namely: 1). Data Collection, 2). Data Coding, 3). Data Processing, 4). Data Analysis, 5). Data Visualization and 6). Data Storage. During the data management process, the author documents every step you take. This includes notes about how you coded the data, the data processing process, and all the decisions you made during data analysis. Data management in this research is an important part of successful library research. This helps ensure the reliability and validity of research results and allows other researchers to verify the findings if necessary.

RESULTS AND DISCUSSION

A. Understanding Information Systems

A system can be interpreted as a collection of elements that interact to achieve a certain goal. The system approach which is a collection of elements or components or subsystems is a broader definition and is more widely accepted because in reality a system consists of several subsystems or part systems.

In the Complete Indonesian Dictionary (1997: 456) by Eka Yani Arfina states that "A system is a set of elements that are regularly interconnected so that they form a unified whole." According to Dedi Rusmandi in his book entitled Computer Dictionary (1989: 275) explains that "A system is a series of procedures, methods and processes that work together to form a work unit." Meanwhile, according to *Jerry Fitz Gerald, Ardra F. Fitz Gerald, Waren D. Stalling Jr* , in Jogiyanto HM, (2001:1) states "A system is a network of procedures that are interconnected, gathered together to carry out an activity or to complete a certain goal".

System According to Ladjmudin, (2005: 10) is "The system consists of objects or elements, or components that are related and, so that these elements constitute a unified process ". From several definitions of the system above, it can be concluded that a system is a collection of elements or components or subsystems that are interconnected to form a unity until the goal or target is achieved. There are two groups of approaches in defining a system, namely those that emphasize procedures and those that emphasize components or elements.

In today's business world which is full of competition, information is valuable because with good control of this information, companies will be able to take or obtain wider opportunities to develop. With adequate information, a company will be able to make decisions that will support the company's progress.

According to Jogiyanto HM, (2001:8) states "Information is data that has been processed into a form that is meaningful to the recipient and is useful in making current or future decisions". In the Computer and Information Technology Dictionary written by Dudy Misky explains that: "Information is information, explanation. Data that has been processed into a form that has meaning for the recipient and has real value, so that it can be used as a basis for making decisions, and is felt for current or future

decisions." From the description above, information can be defined as data that has been processed into something more meaningful so that it can be used according to one's needs.

According to Jogiyanto HM (2001:11), "An information system is a system within an organization to meet daily transaction processing needs, support operations, managerial and strategic activities of an organization and provide certain external parties with the necessary reports." Information systems, according to *Leitel and Davis* in their book " *Accounting Information Systems* " define that "An information system is a system within an organization that meets the needs of daily transaction processing, supports operations, is managerial and strategic activities of an organization and provides certain external parties with the necessary reports."

B. Basic concepts Production

Production can be defined as activities carried out to process or make raw materials or semi-finished materials into finished goods to meet customer needs. Production can also be defined as intentional action to produce something useful. The production process is the process of changing input into output. There are many types of goods processed in production units, so there are also many types of processes. In general, the production process is divided into two, namely:

1. *Continuous* Production Process . A production process that never changes the type of goods produced. Since the factory was founded, it has always worked on the same goods so the process has never been interrupted by working on other goods. Setup or preparation of production facilities is carried out once the factory starts working. After that, the production process ran smoothly. Usually the order of the production process is always the same so that the location of the machines and other production facilities are adjusted to the order of the production process so that production runs smoothly and efficiently.
2. *Intermittent* Production Process . The production process used for factories that work on various goods , with only a small amount of each type. The types of goods are always changing , so production preparations and machine adjustments are always made every time the type of goods made changes. Changes in the production process are interrupted at any time if there is a change in the type of goods being worked on. Therefore, it is impossible to arrange the location of the machines according to the order of the goods manufacturing process.

C. **Basic Concepts of Fish Auctions**

The meaning of auction according to the provisions of Article 1 of the Auction Regulations or what is abbreviated as VR Stb. 1908 No. 189 is that a Public Sale or Auction is any sale of goods in public by offering prices verbally and/or in writing through an effort to gather interested/auction participants and Article 1 a determines that a Public Sale or Auction must be conducted by or in the presence of an Auction Officer.

Meanwhile, according to the Minister of Finance Regulation Number 93/PMK.06/2010 concerning Instructions for Implementing Auctions, the meaning of auction is the sale of goods open to the public with written and/or verbal price offers which increase or decrease to reach the highest price which is preceded by an auction announcement. .

From the two definitions of auction mentioned above, there are several elements in an auction:

1. Sales of goods to the public carried out in public;
2. Preceded by an auction announcement/gathering of interested/auction participants;
3. Carried out by and/or in the presence of the Auction Officer and the Auction Minutes drawn up by him;
4. This is done by offering or setting unique and competitive prices.

As a market institution, auction sales have advantages/advantages because auction sales are *Built in Control* , Objective, Competitive and Authentic.

1. Objective, because the auction is held openly and there is no priority between auction buyers or auction applicants. This means that they are given the same rights and obligations .
2. Competitive, because auctions basically create a bidding mechanism with free competition between bidders without any pressure from other people so that a fair and adequate price will be achieved according to what the seller wants.
3. *Build in control* , because the auction must be announced in advance and held in public. This means that the auction is carried out under general supervision, even from the time the auction is announced, if there are parties who object, they can submit a verzet. This is done in order to avoid deviations.
4. Authentic, because the auction will produce an Auction Minute which is an authentic deed that can be used by the seller as proof that the sale has been carried out according to the auction procedure, while for the buyer it is proof of purchase which can be used to change the name.

D. Auction Function

The Fish Auction Place (TPI) is one of the main functions in fisheries activities and is also one of the factors that drives and improves fishermen's business and welfare (Wiyono, 2005). Historically, Fish Auctions have been known since 1922, founded and organized by the Fisheries Cooperative, with the aim of protecting fishermen from price games, helping fishermen get a fair price and also helping fishermen develop their business (Indah, 2005).

With these superior characteristics, auctions will guarantee legal certainty, be carried out quickly, achieve prices that are optimal, fair, and efficient. The auction itself has two functions, namely:

a. The private function lies in the essence of the auction, seen from the purpose of trading. In the world of trade, auctions are a means of entering into sales and purchase agreements. Based on this private function, an auction service emerged, known as a voluntary auction.
b. This public function is reflected in three things:
2. secure assets owned or controlled by the state to increase efficiency and orderly administration of state asset management;
3. collect state revenues in the form of auction fees;
4. services that reflect the form of justice as part of the procedural law system in addition to the execution of PUPN, Tax and Perum Pegadaian.

E. Marine Fisheries Statistics

1. Including Production
   a. Production data includes all fish and shrimp catches caught from natural fishery sources (sea and public waters) by fishing/fishing households.
   b. The catch production data is not only the number of catches sold, but also the catch that is eaten by fishermen/fishery households or given to fishermen as work wages.
2. Excluding Production
   a. Fish production data includes catches caught for sport/exercise and recreation or hobbies.
   b. Production data does not include catch results that are thrown into the sea or public waters, immediately after the fish/shrimp are caught.
3. Production Measuring Units
   a. Production Weight/Volume, what is meant by production weight is the wet weight at the time the catch is landed. So if the results of the catch are landed after being processed on board the fishing vessel or in the fishing area, then the weight must be returned to the wet weight.
   b. Production value, which is referred to as production value, is the value at the time the catch is landed. So the price used is the producer price.
4. Fishery Production is all the results of catching fish/other aquatic animals/aquaculture that are caught from natural fisheries sources (seas and public waters), whether cultivated by fishing companies or fishing/fishing households.

5. facilities and infrastructure are all facilities and infrastructure used to support businesses in the marine and fisheries sector, consisting of:
   a. A fishing port (PP) is a place consisting of land and surrounding waters with certain boundaries as a place for government activities and fisheries business system activities which are used as a place for fishing vessels to dock, anchor and/or load and unload fish equipped with shipping safety facilities. and fisheries supporting activities.
   b. Fish Landing Base (PPI) is a place that is usually used as a base, anchorage or mooring for fishing boats/vessels as well as a landing place for fishery products and is the scope of fisheries economic activities.
   c. fish buying and selling transactions by means of auction/bidding between sellers (fishermen or ship owners) and buyers (traders or buyers' agents).
   d. A cold storage *is* a place with cooling facilities that is used to store and maintain the freshness of fish caught by fishermen.
6. Meanwhile, the sustainable potential for capture fisheries production per type of fish

CONCLUSION

Components of the information system in fish auction production, namely: 1). Data Collection: The information system can contain features to record fish data obtained from fishermen, such as type of fish, weight, time and location of catch, and general condition of the fish. 2). Stock Monitoring: The system can provide direct monitoring of fish stocks available in storage. This allows managers to manage inventory more efficiently. 3). Storage Management: The system can assist in managing fish storage, including information about ideal storage temperatures, recommended storage periods, and information about stock availability. 4). Auction Planning: Based on stock data and market demand, the system can help in planning fish auctions optimally. This involves scheduling auction times and ensuring that the number of fish auctioned matches demand. 5). Online Auctions: In today's digital era, information systems can provide a platform for conducting online auctions. This allows buyers from various locations to access and participate in the auction without having to be present at a physical location. 6). Delivery Tracking: The system can provide a tracking feature to follow fish deliveries to buyers, thereby ensuring the safety and quality of the fish is maintained during the delivery process. 7). Data Analysis: Data collected from the entire production and auction process can be analyzed to provide valuable insights, such as market demand trends, sales performance, and operational efficiency and 8). Payment Management : The system can facilitate the payment process for buyers and fishermen, including recording transactions and payments online.

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