

## IMPLEMENTATION OF E-COMMERCE MARKETPLACE B TO B AT THE CENTER RICE MARKET

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### ABSTRACT

The Center Rice Market is a market that functions as a commodity terminal and main distributor of rice as a staple food. The Center Rice Market was built with the aim of increasing the efficiency of the rice market transaction process and shortening the supply chain, price transparency and logistical constraints. Indonesia has the Cipinang Center Rice Market and the Surabaya Center Rice Market. Currently, the buying and selling process at the Center Rice Market still takes place in a traditional manner, where sellers, in this case rice producers, deliver the rice directly to the rice center market. Kompas 15 June 2024, rice producers as rice sellers cannot go directly to wholesalers but must go through brokers. On average, brokers get a service fee of IDR 50/Kg of Rice. In the digital era, to enhance price transparency and logistic efficiency, The Center Rice Market can implement digital marketing using information technology by developing a digital e-commerce base on marketplace BtoB. Currently the majority of Indonesian people including rice producers already use the internet and are accustomed to shopping online. Retailers or wholesalers in The Center Rice Market are also mostly urban communities who are accustomed to using the internet. Food Station enterprise for example has the opportunity to become an e-commerce base on marketplace operator for the Center Rice Market. Actors directly involved in the implementation of E-commerce base on Marketplace BtoB for the Center Rice Market are rice producers, wholesalers, retailers, operators, payment gateways and logistics services. The obstacles in the implementation of E-commerce base on Marketplace BtoB in The Center Rice Market are: how to get customer trust, especially for small-scale rice producers, the high competition between sellers and also between wholesalers, dependence on marketplace operators and lack of digital knowledge.

**Keywords :** *The Rice Wholesale Market; e-commerce; BtoB marketplace, price transparency*

### INTRODUCTION

The Center Rice Market is a market that has regional and local service functions and its transaction system is carried out wholesale (Winardi, 1969). The Center Rice Market is a market that functions as a commodity terminal and the main distributor of rice. In addition, The Center Rice Market also functions as a place to sell rice from rice mills as rice producers. In the era of information technology, The Center Rice Market is also one of the sources of rice market information in terms of quantity, quality and price. In the context of food security, the wholesale market functions as one of the storages of rice stocks in the community. The amount of rice stock and the flow of rice in and out of the Center Rice Market Cipinang are even indicators of the

production situation and price of rice. The Center Rice Market also functions as a price control (buffer stock). Indonesia has several Center Markets specifically for rice such as the Center Rice Market Cipinang (PIBC), the Center Rice Market Surabaya (PIBS) and the Center Rice Market Caringin Bandung. Other center markets do not specifically sell rice but also sell other food commodities, especially vegetables.

One of the objectives of developing the center rice market is to shorten the supply chain of food commodity trade so the rice producers have direct access to large markets. In addition, it also makes it easier for rice retailers to get supply sources with more affordable logistics. Therefore, the development of the center rice market must pay attention to the location with a distance that is affordable for producers and regional markets or retailers. The location of The Center Rice Market usually pays attention to the location of most rice milling units and the location of rice traders or regional markets.

Currently, the buying and selling process at The Center Rice Market is still carried out traditionally, where sellers (rice milling enterprises), deliver rice directly to the rice market. Currently the number of rice wholesalers at PIBC is 350 traders with 774 rice shops and 108 warehouses. Large wholesalers usually not only rent shops but also warehouses. Kompas June 15, 2024, rice milling enterprises as rice sellers cannot go directly to wholesalers but must go through brokers. Brokers take samples and offer rice to several rice traders at The Center Rice Market. Rice traders manually check the quality of the rice. Brokers act as intermediaries for price agreements between sellers and rice traders at The Center Rice Market. On average, brokers get a service fee IDR 50/Kg of rice. If one truck contains 10 tons of rice, the broker will get a service fee IDR 500,000.

To shorten the supply chain, price transparency and logistical constraints, the rice wholesale market can implement digital marketing using information technology by developing a digital e-commerce market based on marketplace B to B (Business to Business). It is a good opportunity, considering that currently almost the majority of Indonesian people including rice milling operators familiar for using the internet and shopping online. Retailers or consumers in the rice wholesale market are also mostly urban communities who are accustomed to using the internet.

There are many choices of *e-commerce platforms* that can be used for online shopping, including *marketplaces*, websites, and social media. The platform most widely used by the Indonesian people are marketplace, websites and then social media (Sirclo, 2020). Now, the coverage of *e-commerce* also getting wider and is no longer limited to the island of Java. In 2017, customers from the Java area contributed 70% of *e-commerce transactions* while other cities outside Java only contributed 30%. In 2022, the distribution of e-commerce transactions in Indonesia is expected to be evenly distributed between cities in Java and other regions in Indonesia. This is because many *e-commerce* are starting to aggressively reach these areas and develop infrastructure access so that distribution is getting easier (Sirclo, 2020).

This mini-research aims to examine the Opportunities and Challenges of Implementing E-commerce Base On Marketplace B to B in the Central Rice Market. This mini-research covers 5 (five) sub-systems, namely: identification of the business process of rice business in the Central Rice Market, the Development of E-Commerce Marketplace Base On B to B in Indonesia, opportunities for implementing E-

Commerce Marketplace B to B, the architecture of the implementation process of the E-Commerce Marketplace B to B in the Center Rice Market, challenges in implementation and also study of the regulations how the government manage the implementation of E-commerce Mrketplace B to B in the Center Rice Market.

## LITERATURE REVIEW

### The Center Market

According to Winardi (1969), the Center Market is a market that has regional and local service functions and its transaction system is carried out wholesale. The Center Market is a market that in its activities is a center for collecting food materials/commodities to be distributed to other markets (Regional Regulation No. 10 of 1986). The Center Market (Wholesale) is a market where carried out large-scale trading (Decree of the Minister of Industry and Trade).

According to the Center for Social and Environmental Research (PPSL, UNPAD 1984), the center market functions as:

#### 1. Wholesale

As a wholesale market, the center market has the functions of purchasing, selling, packing, transportation, warehousing, risk bearing and counseling.

#### 2. Commodity selection

As a commodity market, the center market carries out selection, classification, packaging and other activities to improve quality.

#### 3. Market Information Function

The center market functions as a market information center, thus providing price information, demand volume and consumer requirements information.

#### 4. Quality Control Function

The center market functions to control quality so it must have facilities and infrastructure for transportation from producers to the center market, during loading and unloading and warehousing that meets the requirements so as not to change the quality.

#### 5. Financial functions

The fifth function is as a financial function where the center market usually provides financial services/loans to traders in the center market and provides payment relief if the market management makes purchases first.

The absolute requirements that must be met by a wholesale rice market are as follows: (Kartasapoetra, AG Ir, 1994)

1. The location of the center rice market must be placed in a location that has a minimum total distance to producers as sellers or markets or traders in the existing area . This is closely related to the function of the center rice market as the center of distribution and stock. The statement above refers to the need for a location for the center rice market
2. The location of the center rice market must have infrastructure in the form of electricity and clean water.

3. The location of the center rice market should be far from locations that can cause odor pollution, this is because rice commodities are very easily affected by such pollution.
4. The location of the center rice market must be protected from the possibility of flooding because this will affect the quality of the rice available.

## **E-Commerce**

Global eCommerce Market 2024 stated that global e-commerce growth in 2024 is predicted to reach 10.4%. Indonesia is predicted to be the country with the highest e-commerce growth in the world, which is 30.5%, almost 3 times the average global growth in 2024.

The use of e-commerce and social media as the primary marketing channels during pandemic is an effective way to promote agribusiness products (Gunawan, et al. 2020) in (Soedarto, T. 2022). According to Laudon, J., and Laudon, KC (1998), as cited in (Apriadi & Saputra, 2017) , e-Commerce refers to the process of buying and selling products electronically, involving both consumers and businesses, with computers serving as intermediaries for business transactions. Similarly, Triton (2006:16) as cited in (Huda & Priyatna, 2019) defines e-commerce as electronic commerce where trade transactions, including buying and selling are conducted electronically via internet.

There are several advantages of the e-Commerce online marketing system compared to offline business transactions: a) various kinds of products can be promoted and sold online; b) places to sell products can be obtained via the internet if you have a domain and hosting; c) orders can be made via email, telephone, SMS and others, d) payment methods can be cash or non-cash; e) shipping methods are easy to track; f) customer service is available. The results of research conducted by Apriadi and Saputra (2017), in the implementation e-commerce marketplace BtoB, it involves not only buyers and sellers, but also marketplace administrators who oversee transaction by verifying purchase and sales data. This ensures improved transaction security.

## **Marketplace**

According to Angga Kurnia Putra 2017 in (Apriadi & Saputra, 2017) , marketplace is an internet-based platform (web-based) where business transactions between buyers and sellers are take place. Buyers can explore various suppliers based on their criteria to find the best market prices. so that they get the appropriate market price. Andriatie (2020) also defines a marketplace as an electronic market where the selling and buying of goods or services occur, involving three types of transaction namely BtoB, BtoC & CtoC, with B2B (Business to Business) dominating approximately 75% of the marketplace. In the Asian region, the emergence of Alibaba as the first marketplace also became very popular in 1999. Until now, the development of the marketplace continues to occur. In Indonesia itself, there are currently several local marketplaces that are well-known and often used. Tokopedia, Bukalapak, Blibli, Shopee, Lazada, and several other marketplaces. Various products can be sold and purchased through the marketplace including various food products (Soulofren, 2021). Thailand is a country that already has a BtoB marketplace specifically for rice

called *Rice Exchange* .

According to Soulofren (2021) the benefits of operating an online marketplace include : (1) Increased opportunities through community engagement, (2) No concern about losing consumers, (3) Effective marketplace features and regulations, (4) Low capital requirements (5) The ability to track business growth using insights feature. This feature allows monitoring of store visits, customer interaction, responses and products purchases. On the other hand, the disadvantages of an online marketplace include: (1) Challenges in building trust, (2) High competition between traders, (3) Depends on the marketplace administrator, and (4) irregularity in business flow (sporadic).

Business to Business (BtoB) ie-commerce refers to online transaction between producers (such as companies, industries, providers of goods and services) with distributors (suppliers) and retailers. These distributors or retailers then distribute the products to their respective consumers.

According to Lenti, FN (2017), the BtoB process involves activities such as supply chain management, information exchange, operational management and other related functions. There are three stages in BtoB e-commerce, namely: Physical Distribution, Information Exchange, and Business Process Integration. At the Physical Distribution stage, there is physical distribution of products, which involves the Manufacturing Supply Chain. The Manufacturing Supply Chain consists of Supplier (S), Manufacturer (M) and Customer (C). The Manufacturing Supply Chain consists of two parts, namely:

1. Upstream (top level) involving Supplier (S) with manufacturer (M). Manufacturer distributes products to suppliers, not to end consumers.
2. Downstream (Lower level) involving Manufacturer (M) and Customer (C). Manufacturer distributes products directly to end consumers.

At the Information Exchange stage, there is an information exchange process where B2B occurs here between Supplier (S) and manufacturer (M) and Manufacturer (M) with Customer (C). The last stage is Business Process Integration, where there is a merger or integration of several business processes involving collaboration between Supplier and Manufacturer and collaboration between Manufacturer and Customer. According to (Apriadi & Saputra, 2017) the functional requirements of a e-commerce marketplace-based information system are: a) able to register sellers and buyers; b) able to verify seller and buyer registration c) able to carry out buying and selling transactions; d) able to process product data sold; e) able to verify buying and selling transactions; f) able to provide transaction reports for sellers; g) able to provide reports for marketplace managers ; h) able to carry out transaction cancellation processes; i) able to process comments.

## RESEARCH METHODOLOGY

This mini research utilizes a literature study approach. The literature study method involves a series of activities related to gathering library data, reading and recording, and managing research materials (Katalinggi, 2024). Through this approach, researchers gain a broader and deeper understanding of the issue being investigated. The literature study is conducted after the research topic and problem formulation are determined, but before researchers proceed to the field to collect the

necessary data (Darmadi, 2011).

The data used in this study are secondary data that refer to information that can be accessed by the public (Miza Nina Adlini et al., 2022). After data collection, the next stage is to conduct analysis. The final stage of this literature study is the conclusion and recommendation suggestions. The object of this literature study is the Center Rice Market in general which has the potential to implement digital marketing through the implementation of e-commerce marketplace-based BtoB to shorten the supply chain, more transparent trade, direct market access to consumers (wholesalers at the Rice Wholesale Market) and logistics efficiency. The development stages into *e-commerce* marketplace-based B to B at the Central Rice Market are as follows: a) comparing the functional needs of e-commerce marketplace- B to B in general b) Identifying operational and managerial constraints related to fulfilling the stages of e-commerce marketplace-based BtoB needs at the Rice Wholesale Market and c) Compiling recommendations to resolve these constraints.

## RESULTS AND DISCUSSION

The rice trading system is considered efficient if it meet several requirements, namely being able to deliver rice from producers (case rice milling operators) to wholesalers or the Central Rice Market and finally to the end consumers with the lowest possible cost. In addition, an efficient trading system is a marketing system with fair profit sharing throughout the supply chain. Efficient trading is also able to ensure that buyers can obtain goods at the right location in terms of time, quality and price.

The implementation of digital marketing in the Center Rice Market through E-commerce Marketplace-Based BtoB aims to create a more efficient rice trade system. The advantages E-commerce of marketplace-based BtoB are: a) it can shorten the supply chain of food crop commodities, b) producers and consumers of food crops can get better prices, c) the security of the transaction process, d) the buying and selling process is easier because it is done online, e) the promotion process becomes more efficient. This study begins with mapping the functional needs of the E-commerce Marketplace B to B application to shorten the rice supply chain, transparent trade, and logistics efficiency.

### Functional Requirements for Implementing BtoB Marketplace-Based E-Commerce at the Main Rice Market

#### 1. Rice Producer Registration

Registration of rice producers in this case is a rice milling operator as an actor who will sell rice to wholesalers or the central rice market registered in the E-commerce Marketplace-Based BtoB application. Indonesia has 1,056 large-scale rice milling business actors with a milling capacity of more than 3 tons/hour, 7,332 medium-scale rice milling units with a capacity of 1.5 <scale <3 tons/hour, and 161,401 small-scale milling units with a capacity of 1.5 <scale <3 tons/hour (BPS 2020). Rice Milling Operators that proposed to registered as members of the Center Rice Market that implements E-Commerce Marketplace-Based BtoB must have a storage warehouse that meets standards and drying facilities. This is to ensure that rice

producers have a stock of rice to sell..

Registration as a rice producer (seller) should be done via the web and/or android-based. Android-based rice marketing digitalization will facilitate users (rice suppliers). Android-based registration must be done by downloading the application via the playstore.

Marketplace managers can create additional requirements for registrants as suppliers (rice sellers) to the wholesale level or The Center Rice Market. Verified suppliers can display their products on the homepage of the E-commerce Marketplace-based BtoB application for commercial pages. The simulation of registration as a rice producer is as follows:

**a. Registration Using Android-based Mobile Phones:**

- 1) Download the E-commerce B Marketplace Based BtoB application with a specific name that has been registered on Playstore
- 2) Select the "Manufacturer" menu
- 3) Select "Register"
- 4) Enter your mobile number
- 5) Select 'continue' or 'next'
- 6) Enter the OTP code sent by the Platform to your cellphone
- 7) Select 'continue' or 'next'
- 8) Enter Password (password must consist of letters and numbers).
- 9) Select Send
- 10) The information 'finished' appears

If you have reached the "finished" stage, it means you have obtained an account on the E-commerce Marketplace-Based BtoB platform for the Center Rice Market.

**b. Registration Using Web:**

- 1). Open the official website of the Digital Main Market via E-commerce Marketplace-Based BtoB
- 2). Select the "Supplier" menu
- 3). Select the "Register" menu
- 4). Enter your mobile number
- 5). Enter an email address (Optional) for buyers who want to receive transaction reports via email.
- 6). Select 'continue' or 'next'
- 7). Enter the OTP code sent by the Digital Main Market Platform
- 8). Select 'continue' or 'next'
- 9). Enter Password (Password must consist of letters and numbers)
- 10). Select Send
- 11). If 'finished' appears

If you have reached the "finished" stage, it means you have obtained an account on the BtoB Marketplace-based E-commerce platform, The Center Rice Market.

**2. Rice Producers (Seller) Verification**

In the development of the digital Rice Market using e-commerce marketplace-based BtoB the producer verification process is very important in determining the success of the marketing platform. The verification process for business actors must be accompanied by a site visit to ensure that the uploaded documents match the

conditions in the field, including the readiness of the product to be displayed on the digital marketing application platform through e-commerce marketplace-based BtoB at the Center Rice Market. Verification of business actors is carried out by matching the documents uploaded to the application with the conditions in the field. Therefore, the platform owner must have a verifier of the suitability of the prospective seller's documents to the provisions prepared in the application. Business actors who have been verified will get a username and password.

### **3. Rice Stock Price Information at Supplier**

Digital marketing through E-commerce Marketplace-Based BtoB provides product information (rice type, rice quality, stock and price offered). Rice quality includes broken content (broken grains) and water content. The Rice producer who registered by the Center Rice Market must update price trends at the provincial level through E-commerce Marketplace Base on BtoB system.

### **4. Wholesaler Registration**

Wholesalers are traders who purchase rice from suppliers in large quantities. In the implementation of E-commerce Marketplace-Based BtoB for the Center Rice Market, they must be registered and verified by the marketplace manager. Wholesalers are traders who have been registered at the Center Rice Market. Wholesalers must have offline stores and warehouses for storing rice stocks that will be sold to retailers. The simulation of the wholesaler registration process at this digital main market is:

#### **a. Registration Using Android-based Mobile Phones:**

- 1) Download the E-commerce Marketplace Based BtoB application with a specific name that has been registered on Playstore
- 2) Select the "Wholesaler (Supplier)" menu
- 3) Select "Register"
- 4) Enter your mobile number
- 5) Select 'continue' or 'next'
- 6) Enter the OTP code sent by the HargaTani Platform to your cellphone
- 7) Select 'continue' or 'next'
- 8) Enter Password (password must consist of letters and numbers).
- 9) Select Send
- 10) The information 'finished' appears

If you have reached the "finished" stage, it means you have obtained an account on the BtoB Marketplace-Based E-commerce platform.

#### **b. Registration Using Web:**

- 1) Open the official website of the Center Rice Market using E-commerce Marketplace-Based B to B
- 2) Select the "Wholesaler" menu
- 3) Select the "Register" menu
- 4) Enter your mobile number
- 5) Enter an email address (Optional) for buyers who want to receive transaction reports via email.

- 6) Select 'continue' or 'next"
- 7) Enter the OTP code sent by the Marketplace Application Management Platform
- 8) Select 'continue' or 'next"
- 9) Enter Password (Password must consist of letters and numbers)
- 10) Select Send
- 11) If 'finished' appears

If you have reached the "finished" stage, it means you have obtained an account on the E-commerce Marketplace-Based BtoB platform.

## 5. Registration as a retailer

The E-commerce Marketplace-Based BtoB Manager also provides a menu to register retail traders who purchase rice from wholesalers (suppliers) who are already registered in the Central Rice Market (Registration as a retailer).

## 6. Functional Requirements for Sales and Purchase Transaction Management

The development of E-commerce Marketplace-Based BtoB Application for the Center Rice Market requires the availability of a functional system that is able to manage online sales and purchase transactions. Suppliers, wholesalers and retailers can make transactions through e-Commerce marketplace-based BtoB after registering and getting a username and password to log in.

The design of the stages of the buying and selling transaction process on the e-commerce marketplace-based BtoB for the Center Rice Market is as follows :

- a. Suppliers use usernames and passwords to log in to the web-based and Android-based Digital Rice Market application.
- b. Supplier offers purchased products
- c. The buyer puts the items to be purchased into the 'shopping basket'
- d. Buyers receive an invoice/payment bill created by the administrator of the Harga Tani application platform manager.
- e. Buyers make payments through a payment gateway that collaborates with a E-commerce Marketplace-based BtoB platform.

To facilitate the transaction flow, the management of e-commerce marketplace-based BtoB platforms collaborates with Payment Gateway. Payment Gateway is a financial service to digitally process the flow of payment transactions from buyers to sellers (*merchants*). To ensure transaction security on December 4, 2017, Bank Indonesia issued Regulation No. 19/8/PBI/2017 which contains provisions for the National Payment Gateway (GPN) Format. The policy is also complemented by Regulation of the Board of Governors Member No.19/10/PADG/2017 concerning the National Payment Gateway. The mechanism of government cooperation with payment gateway providers in developing the digitalization platform of the main market into a *e-commerce marketplace*- BtoB based in 2025 can be implemented if there is regulatory support.

- f. The Center Rice Market platform manager receives payment notifications from buyers via. Based on the literature study conducted, platform managers usually work with payment gateways to accommodate transactions on e-commerce marketplace-based BtoB. This is to facilitate the payment process carried out by buyers who use payments with various payment methods.

- g. The platform manager verifies the validity of the payment transaction. Payment transactions that are rejected based on the verification results will be rejected and returned to the buyer.
- h. Sellers receive transactions that have been verified by the administrator on the E-commerce Marketplace-Based BtoB application platform.
- i. The seller carries out the process of sending the goods  
For delivery of goods, sellers can collaborate with online transportation to facilitate tracking by system.
- j. The seller then inputs the shipping receipt into the system.
- k. The marketplace manager then receives a delivery notification to the buyer.
- l. The marketplace manager will transfer the payment to the seller's account.
- m. Buyer receives the ordered goods

## 7. Data Processing Needs for Products Being Traded

Processing of product data sold includes information on how much stock of products are traded and ratings of product quality. Data processing also includes comment data from customers in this case consumers or business partners such as transportation services or payment gateways.

## 8. Obstacles in Implementing Marketplace-Based E-commerce

Some of the obstacles in implementing the Digital Rice Main Market through E-Commerce Marketplace-Based BtoB are:

- a. it is difficult to gain customer trust, especially for small-scale rice producers.
- b. Competition between sellers and also between suppliers
- c. Dependence on marketplace managers
- d. Lack of digital knowledge

## CONCLUSION AND SUGGESTIONS

The Center Rice Market can implementation digital marketing through an e-commerce marketplace-based BtoB platform marketing system for increasing price transparency, logistics efficiency and shorten the rice supply chain and become a reference for national rice prices. In the digital era, the opportunity to implement E-commerce Marketplace-based BtoB at the Center Rice Market is very large because the number of internet users and the growth of marketplaces in Indonesia are very large. Actors in digital rice marketing at the digital-based The Central Rice Market are rice producers (rice milling operator), wholesalers, retailers, marketplace operators, payment gateways and logistics services.

The challenging in implementing e-Commerce Marketplace-Based BtoB are: difficulty in gaining customer trust, especially for small-scale rice producers, competition between sellers and also between suppliers, dependence on marketplace managers and lack of digital knowledge.

As a follow-up to this mini-research, further research is needed for the design of information technology in the transformation of the traditional Center Rice Market into modern Center of Rice Market through implementation E-commerce Marketplace BtoB. In addition, an audience is needed with the managers of the Center Rice Market regarding the opportunities for implementing E-commerce Marketplace-Based BtoB at the Rice Market in both Cipinang and Surabaya.

## REFERENCES

Apriadi, D., & Saputra, AY (2017). *Marketplace -Based E-Commerce* in an Effort to Shorten the Distribution of Agricultural Product Sales. RESTI JOURNAL (System Engineering and Information Technology) Vol.1 No.2 (2017) 131-136 ISSN Electronic Media: 2589-0760 DOI: <https://doi.org/10.29207/resti.v1i2.36>

Arief, MI, & Kurniawan, R. (2020). Development of Commodity Price Scraper Web Application System Using Design Oriented Research Method. Jambura Journal of Informatics. Vol. 2. No. 1. (2020). DOI: <https://doi.org/10.37905/jji.v2i1.4474>

Ariyanto, D. & Mustakim, M. (2016). Web-Based Geographic Information System for Mapping Agricultural Commodities in XYZ Regency. Sunan Kalijaga Informatics Journal. Vol. 1 No. 1. DOI: <https://doi.org/10.14421/jiska.2016.11-05>

Faqih, A., (2021). Analysis of Leading Commodities in the Agricultural Sector. JPPI (Journal of Indonesian Educational Research Vol.7 No. 4 (2021). DOI: <https://doi.org/10.29210/020211242>

Huda, B., & Priyatna, B. (2019). *Use of Content Management System (CMS) Applications for E-Commerce Based Business Development* . 1 (2).

Irawati, R. & Prasetyo, IB (2021). Utilization of E-Commerce Platforms Through Marketplaces as an Effort to Increase Sales and Maintain Business During the Pandemic (Study on Food and Beverage MSMEs in Malang). STIE Malang.

Lenti, SN (2017). Business Process Engineering in B2B-B2C E-Commerce Using Affiliate System

Lukman, 2021. *Supply Chain Management* . Bright Star Light. Gowa

Research Methodology. Sundari, et al. Katalingga, SY (2024). CV. Gita Lentera. ISBN. 978-623-88909-9-6

Nurhayati, N. (2016). Determination of Superior Commodities of Food Crops Based on Production Value in West Kotawaringin Regency. Daun: Scientific Journal of Agriculture and Forestry Vol. 3. No. 2. (2016) DOI: <https://doi.org/10.33084/daun.v3i2.149>

Nurani , Syuryadi. (2022). Web and Android-Based Food Price Commodity Monitoring Information System. Vol. 13 No. 3. December 2022. <https://doi.org/10.37639/jti.v13i3.339>

Pratama, A., Hasibuan, PK (2022). Harvest Data Information System. SISFO (Scientific Journal of Information Systems). Vo. 6. No. 2 Year 2022. DOI: <https://doi.org/10.29103/sisfo.v6i2.10144>

Rahayu, REG, & A. Fauzi, (2021). Design and Construction of Geographic Information System for Agricultural Products in Garut Regency. Jurnal Algoritma, vol. 17, no. 2, pp. 515 - 524, Feb 2021. <https://doi.org/10.33364/algoritma.v17-2.515>

Rahman, R., & Wahyuni, S. (2017). Design of Realtime Food Price Information System as a Policy Instrument for Regional Inflation Control. Journal of Information Systems and Processing. Vol 2. No. 2 (2017). DOI: <https://doi.org/10.24252/insypro.v2i2.4067> Sirclo. 2020. "The Number of Indonesian E-Commerce Users in 2020 Increases Rapidly". <https://www.sirclo.com/jumlah-pengguna-e-commerce-indonesia-di-tahun->

2020meningkat-pesat/

Smales, L.A. (2022). Trading Behavior in Agricultural Commodity Futures around the 52-Week High. *Commodities* 2022, 1, 3–17. <https://doi.org/10.3390/commodities1010002>

Soewignyo, F., & Simatupang, N. (2020). The Effect of Changes in Agricultural Commodity Prices on Farmers' Welfare in North Sulawesi Province. *Klabat Accounting Review*. Vol. 1. No. 1. Year 2020. DOI: <https://doi.org/10.60090/kar.v1i1.454.14-26>

Steen, M., Bergland, O., Gjolberg, O. (2023). Climate Change and Grain Price Volatility: Empirical Evidence for Corn and Wheat 1971–2019. *Commodities* 2023, 2, 1–12. <https://doi.org/10.3390/commodities2010001>