Global Forest Journal

Analysis of business feasibility and trade system for rattan crafts in Rumbai District, Pekanbaru City

Siti Latifah[*1,2], Agus Purwoko[2], Sindy Hutapea[3]

[1]*Faculty of Forestry, Universitas Sumatera Utara, Medan, 20353, Indonesia*
[2]*PuskaTrop Universitas Sumatera Utara, Medan, 20353, Indonesia*
[*]Corresponding Author: sitilatifah@usu.ac.id

ARTICLE INFO	ABSTRACT
  How to cite: S. Latifah, A. Purwoko, S. Hutapea, "Analysis of Business Feasibility and Trade System for Rattan Crafts in Rumbai District, Pekanbaru City", *Global Forest Journal*, vol. 01, no. 01, July 2023	Rattan is one of the commodity timber forest products used as raw material for the rattan industry. One of the small businesses that is quite developed in Rumbai District, Pekanbaru City is the rattan handicraft business which is a traditional small industry and is a family business. This study aims to determine the business feasibility and trading system of the rattan handicraft trade. This research was conducted with a quantitative and qualitative descriptive approach. The method used for data collection is a field survey through observations, interviews, and questionnaires on rattan craftsmen and Trade Units (UD). UD Rattan Crafts in Rumbai can be said to be worthy of continuing. This is because the NPV value of the trading business in Rumbai is > 0, IRR > from interest rates, and BCR > 1. Analysis of the trading system shows that there are trading system functions that are used, namely the exchange function, physical function, and facility function. **Keyword:** Business, Feasibility, Non-Timber, Rattan, Trade System

1. Introduction

Non-timber forest products have the potential to have an impact on increasing the income of communities around the forest and contributing to the country's foreign exchange [1]. One of the non-timber forest products that can be utilized by the community is rattan. Rattan has a high selling value and can be processed into various furniture materials [2]. Rattan is a very important non-timber forest product commodity for Indonesia because Indonesia is the largest rattan producing country in the world (80% of the world rattan trade). Under these conditions, Indonesia has a great opportunity in the rattan processing industry which can produce added value beyond raw rattan. Rattan processing businesses can produce processed products aimed at achieving a certain goal of profit so that the business can be carried out continuously [3].

The rattan industry, which has developed as a reliable commodity for state revenues, has been seen as a trade commodity for non-timber forest products (NTFPs) which is quite important for Indonesia [4]. Furniture and other products made of rattan for domestic and foreign markets [5]. One of the rattan handicraft trading businesses which is quite developed is in Rumbai District, Pekanbaru City. The trading business produces two groups of types of handicrafts, namely furniture and woven crafts. Handicrafts in furniture include minimalist dining tables, patio chairs, and guest tables, while wicker handicrafts include rocking chairs, serving lids, terraced flower pots, cloth baskets, rattan ring basket, fruit baskets, aqua baskets, and others.

To assist entrepreneurs in making business decisions, a business feasibility analysis can be carried out so that they can help prevent entrepreneurs from losing business. Feasibility analysis is an aspect that is used to

calculate the finances of a business as a whole [6]. In knowing the feasibility analysis, you can use Net Present Value (NPV), Internal Rate of Return (IRR), and Net Benefit Cost Ratio (BCR) analysis, to find out whether a business is feasible or not [7].

In the rattan trading business, trade information is also needed as an economic activity that functions to bring or deliver goods/services from producers to consumers [8]. The ultimate goal of the trading system is to place goods in the hands of consumers. Based on these problems carried out research that aims to analyze the feasibility of the rattan business and trade system to develop rattan handicraft business in Rumbai Pekanbaru District.

2. Method

The research was carried out at the Rattan Crafts Trading Business in Rumbai District, Pekanbaru City, Riau Province from December 2022 to April 2023. The research location can be seen in Figure 1, as follows:
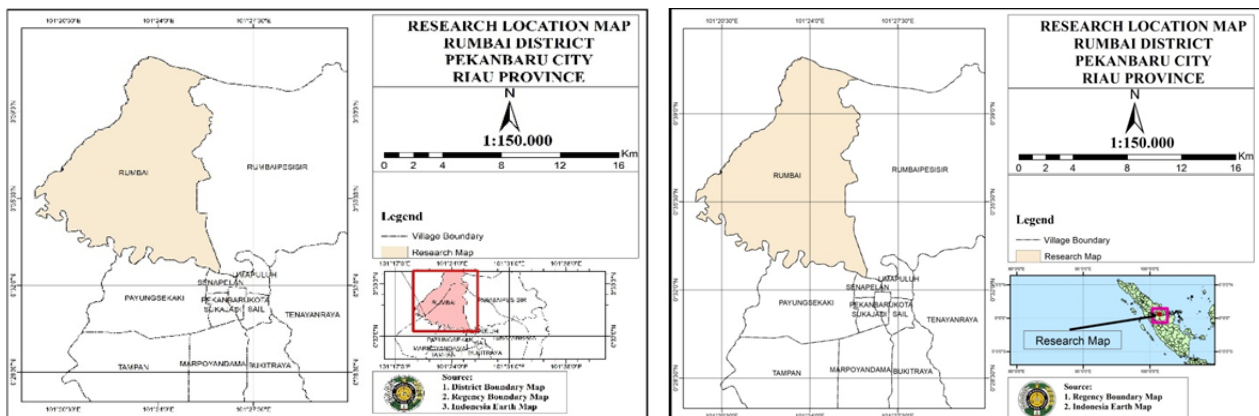

Figure 1. Map of Research Locations at Rumpai District Pekan Baru

The tools used in this research are cameras and stationery. The software for data analysis used is Microsoft Excel. The materials used in this study were questionnaires for collecting primary data and secondary data, and previous research reports from various supporting literature.

2.1. Data collection techniques and sources

The collection technique data is done by field survey through observations, interviews, and questionnaires on rattan craftsmen and Trade Units (UD). The data sources used are primary data and secondary data [9]. Primary data is data obtained from respondents which can be in the form of respondent identity consisting of age, education, business experience, regarding raw materials, business capital, labor, product marketing, costs incurred in the production process, and income received. While the secondary data collected was obtained from trading business documentation in the form of salaries, published financial reports from trading businesses, and so on from the agencies concerned with this research [10].

2.2. Feasibility Analysis

A business feasibility analysis is used with the following formula to determine the extent to which advantages can be received in engaging in an activity or business:

2.2.1. NPV (Net Present Value)

The formula used to calculate the NPV is as follows [11]

$$NPV = \sum_{t=1}^{n} \left(\frac{At}{(1+k)^t} \right) - co \tag{1}$$

Where: co: initial investment value
            K: value of the lowest interest rate
            At: cash flow in period t
            t: year-th
            n: number of years

2.2.2. IRR (Internal Rate Of Return)
The formula used in calculating the IRR is as follows [12]

$$IRR = P1 - C1 \; x \; \frac{P2-P1}{C2-C1} \qquad (2)$$

Where: $P1$: positive NPV interest rate
P2: Negative NPV interest rate
C1: NPV1
C2: NPV2

The business is said to be feasible if the IRR > the lowest interest rate (discount rate) and the business unit is said to be infeasible if the IRR < the lowest interest rate (discount rate).

2.2.3. BCR (Benefit Cost Ratio)
A business is said to have economic benefits, and is feasible, if the BCR value is greater than one. If the BCR value is less than one, then the business will incur economic losses if implemented. BCR calculated by the formula [12]

$$B/_C \; Ratio = \frac{PV \; Benefit}{PV \; Cost} \qquad (3)$$

Where: PV Benefits: Present Value of Profits
PV Cost: Present Value of Fees

2.3. Trade system analysis
The analysis carried out in the trading system is a qualitative analysis. The qualitative analysis is carried out by direct observation of the state of the trading system which includes trading system institutions and trading system functions, trading system channels, market structure, and market behaviour by rattan craftsmen to deal with rattan price fluctuations [13].

3. Result and Discussion

3.1. Financial Feasibility
Assessing the financial feasibility of a business can be seen from the economic and business side. In general, in reviewing financial feasibility, it is necessary to pay attention to the comparison of the value of the costs that have been incurred [4]. The aspects used to calculate the feasibility of a financial business are Net Present Value (NPV), Internal Rate of Return (IRR), and Benefit Cost Ratio (B/C Ratio) [14].

Table 1. Net Present Value (NPV) of rattan crafts in Rumbai District

No	UD name	NPV	Information
1	UD Pak De	221,371,108	Worthy
2	UD Lasindo	150,345,332	Worthy
3	UD Kirana	190,321,395	Worthy
4	UD Young	222,703,352	Worthy
5	UD Citra	213,526,420	Worthy

3.1.1. Net Present Value (NPV)
Rattan crafts in Rumbai District as a comparison between the present value of incoming cash flows and the present value of cash outflows at a certain period can be seen in Table 1. One of the advantages of using the NPV method is that the calculation of cash flows can be based on the concept of the time value of money, therefore in calculating NPV the most important thing is to interpret cash inflows and cash outflows in the future [15]. In calculating the NPV in this study, the discount rate factor used is 5.70% according to the current average bank interest rate. This bank's interest rate was obtained from Bank Indonesia's interest rate at the time this research was carried out. Based on the financial feasibility analysis, the NPV value at UD Pak De was 221,371,108, the NPV at UD Lasindo was 150,345,332, The NPV at UD Kirana was 190,321,395, the NPV at

UD Young was 222,703,352 and the NPV at UD Citra was 213,526,420. In this case, UD rattan handicrafts in Rumbai has a positive value and will provide net benefits to the owners for a period of one year, thus based on the NPV criteria, this business is feasible to carry out, because if the NPV > 0 then a business is feasible to continue. This is in accordance with the NPV category, namely if cash inflows with a current value equal to investment costs or in other words NPV = 0, then income is only enough to pay investment costs and a business will be said to be feasible if the NPV value is more than 0 [16] In this case UD rattan handicrafts in Rumbai has a positive value and will provide net benefits to the owners for a period of one year, thus based on the NPV criteria, this business is feasible to carry out, because if the NPV > 0 then a business is feasible to continue. This is in accordance with the NPV category, namely if cash inflows with a current value equal to investment costs or in other words NPV = 0, then income is only enough to pay investment costs and a business will be said to be feasible if the NPV value is more than 0 [16] In this case UD rattan handicrafts in Rumbai has a positive value and will provide net benefits to the owners for a period of one year, thus based on the NPV criteria, this business is feasible to carry out, because if the NPV > 0 then a business is feasible to continue. This is in accordance with the NPV category, namely if cash inflows with a current value equal to investment costs (NPV = 0) then income is only enough to pay investment costs. Meanwhile a business will be said to be feasible if the NPV value is more than 0 [16]

3.1.2. Internal Rate of Return (IRR)

IRR is a technique for calculating the rate of return on capital spent in operating a firm. The IRR method considers cash inflows from a business and can generate returns on investment in the form of ratios so that they can be compared with bank deposit rates [17]. The IRR value of rattan crafts in the Rumbai District can be seen in Figure 1 below.
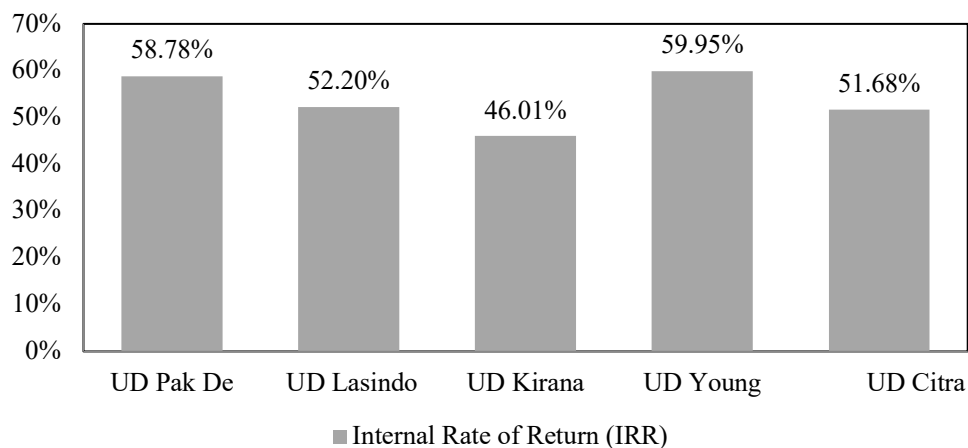

Figure 2. Internal Rate of Return (IRR) for rattan crafts in Rumbai District

Based on financial analysis, it was obtained that the IRR value for UD Pak De was 58.78%, this indicated that this business was feasible to run until the market interest rate was 58.78%. At UD Lasindo the IRR is 52.20% so this rattan handicraft business is feasible to run until the market interest rate is 52.20%. At UD Kirana, the IRR value is 46.01%, so this business is only feasible to run until the market interest rate is 46.01%. At UD Young the IRR is 59.95%, this shows that this rattan handicraft business is feasible to run until the market interest rate is 59.95%. At UD Citra the IRR value is 51.68%, so this rattan handicraft business can only be run until the market interest rate is 51.68%. Based on the results of the IRR value of rattan crafts in Rumbaigreater than the specified discount rate of 5.7%. This shows that the UD rattan handicraft business in Rumbai is feasible to continue because it is following the assessment criteria if the IRR ≥ the lowest interest rate is said to be feasible [18].
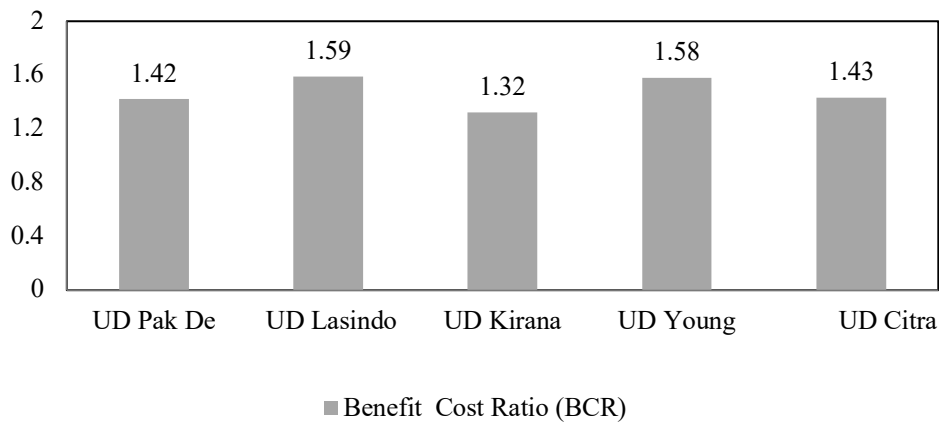
Figure 3. Benefit Cost Ratio (B/C Ratio) of rattan crafts in Rumbai District

3.1.3. Benefit Cost Ratio (B/C Ratio)

B/C Ratio namely a comparative analysis between the present value of profits and the present value of total costs. BCR is used to analyze costs and benefits which can involve estimating and evaluating the benefits associated with alternative businesses to be carried out [19]. Based on the results of the financial feasibility analysis in Figure 2, It can be seen that the BCR value at UD Pak De is 1.41, the BCR value at UD Pak Lasindo is 1.59, the BCR value at UD Kirana is 1.32, the BCR value at UD Young is 1.57, and the BCR value at UD The image is 1.43. In this case, UD rattan crafts in Rumbai have positive benefits and can be continued because the BCR value of UD rattan crafts is more than one [20].

3.2. Commerce

The analysis of the trading system used in this research is the function of the trading system, the marketing channels, the market structure, and market behaviour. This is in accordance with the opinion of [21] which states that the analysis of the trading system can be carried out using an analysis approach of market structure, market behaviour, trading system channels, and functions of the trading system. In addition to knowing and generating income, there is a trading system that can help, to know the process starting from the production process to the consumer. A trading system is all activities related to all aspects of the process that lie between the phases of the activities of the production sector of goods and services to the activities of the consumer sector [22]. The institutions involved in the trading process are classified into five groups, namely: Merchant middlemen, Agent middlemen, Speculators (Speculative middlemen), Processors and manufacturers, and Facilitative organizations [23]. The results of the analysis of the trading system in the study area are as follows:

3.2.1. Trade function

The marketing function is an activity carried out by each marketing agency in distributing rattan production to the hands of consumers [24]. The trading system functions of rattan craftsmen are exchange function, physical function, and facility function. In the exchange function, namely, rattan craftsmen purchase rattan that has been preserved and processed to factories, and craftsmen sell rattan handicrafts to customers [25]. The physical functions carried out by the craftsmen are the processing function and the storage function. In the processing function carried out by craftsmen, namely making guest chairs, dining tables, patio chairs, chaise lounges, lounge chairs, serving covers, rattan plates, fruit baskets, children's swings, filling parts, fruit parcels, mirrors, hula-hoop, baskets, piggy banks, mats, and others. In the storage function, craftsmen will store their rattan handicrafts in a trading place located on Jalan Yos Sudarso, Rumbai.

Facility functions performed by craftsmen are financing activities, risk sharing, and market information. Capital for rattan craftsmen comes from their capital. The capital is used to bear the costs of buying rattan, paying workers' wages, renting houses, and others. One of the risks that is often experienced by craftsmen is rattan which is sometimes not good or weathered. Sometimes there is rattan that is preserved, but because during the drying process, it is still not dry enough, it is immediately sold, causing the result to rot quickly. The function of market information for rattan craftsmen is obtained from other rattan crafts sales, and sometimes it depends on the costs that have been used for the production of a particular craft.

3.2.2. Rattan trading channel in Rumbai

The trading system channel is a series of institutions that make all functions usable as the distribution of products and their ownership status from producers to consumers [26]. The trading system channel also describes the linkages between rattan trading system actors in Rumbai and the implementation of trade system

functions carried out by each trading system institution as an effort to increase the added value of rattan. In this study, there is a trade system channel I, which starts from the farmers as producers - rattan processing factories - rattan craftsmen. The trade system institution that is used as the final consumer in this study is rattan craftsmen.

3.2.3. Market structure

Market structure is an operational characteristic based on the relationship between sellers and sellers, between buyers and buyers, and between buyers and sellers [27]. The market structure at the level of rattan craftsmen is the perfect market. This is due to the large number of rattan handicraft trading businesses. The existence of many rattan handicraft trading businesses also cannot affect the price of rattan handicrafts. The price of rattan handicrafts is formed through production costs that have been incurred for a product/goods and the complexity in the production of products/goods [28].

3.2.4. Market Behaviour

Market behaviour, namely the behavior of trading system institutions involved in the trading system channel of a business, and these trading system institutions adjust to the market structure. Where the institution carries out buying and selling activities, including the forms of decisions taken in dealing with the market structure. Market behaviour can be observed in the pricing system, method of payment, and buying and selling practices between rattan trading institutions. Market behaviour can be seen from the pricing system, payment system, and cooperation that exists between marketing agencies. Pricing in this study depends on the raw materials used and how payment is made in cash. The trading system is expected to help find out the trading system channels from producers to consumers, making it easier for entrepreneurs and prospective entrepreneurs in product marketing [8].

4. Conclusion

It can be said that the rattan handicraft trading business in Rumbai is feasible to continue. This is because the NPV value of the trading business in Rumbai is > 0, IRR > from interest rates, and BCR > 1. In the trading system, there are trading system functions that are used, namely the exchange function, physical function, and facility function. The market structure of rattan craftsmen is perfect. The marketing channel starts with the farmers - rattan processing factories - rattan craftsmen. Market behaviour can be observed in the pricing system and method of payment.

Acknowledgements

References

[1] Ratnaningsih Y, Sari W P. "Income Analysis of Eucalyptus NTFP Farmers (*Melaleuca cajuputi*) in Protected Forestry in Montong Sapah Village, Southwest Praya District, Central Lombok Regency," Journal of Silva Samalas, vol. 3, no 2, pp. 7-14. 2020.

[2] Fitri M, Yumarni, Noril M. "Economic Valuation of Manau Rattan (*Calamus manan*) Processing in the Bukit Barisan Forest (Case Study in the Putra Andam Forest Farmer Group Dewi Nagari Sungai Nyalo, Koto XI Tarusan District, Pesisir Selatan District," *Strofor Journal*, vol. 6, no. 2, pp. 111-124. 2022.

[3] Wahab R, Mokhtar N, Ghani RS, Sulaiman MS. "An Overview Of Rattan Industry Status And Its Economic Aspect In Setting Up Rattan-Based Industry In Malaysia," *Journal of social sciences and Humanities*, vol. 16, no. 3, pp. 1-10. 2019.

[4] Hendra, Antara M, Lamusa A. "Analysis of Income and Feasibility of Rattan Chair Business at Tohiti Rattan Source Furniture Furniture UKM in Palu City," *Agrotekbis*, vol. 2, no. 3, pp. 277-281. 2014.

[5] Meljaard E, Achdiawan R, Wan M, Taber A., *Rattan: The Decline Of A Once-Important Non-Timber Forest Product In Indonesia*, Cifor, Bogor, 2014.

[6] Puspitasari L. Dwiasturi. R. "Financial Feasibility Analysis of Strawberry Tourism Garden (Case in Strawberry Highland Tourism Garden)," *Journal of Agricultural Economics and Agribusiness*, vol. 2, no. 3, pp. 187-193. 2018.

[7] Fadhilla N, Hadayani H, Alam MN. "Analysis of Financial Feasibility of Rattan Furniture Business at CV. Bone Layana Jaya in Palu City," *Agrotekbis: E-Journal of Agricultural Sciences*, vol. 5, no. 6, pp. 705-713. 2017.

[8] Erviyani E, Makkarennu M, Sahide MA, Mahbub AS. "Analysis of Rattan Trade System in Batu Village, Pitu Riase District, Sidenreng Rappang Regency," *Journal of Forests and People*, vol. 9, no. 1, pp. 1-7. 2017.

[9] Sulaeman Z, Mustanir A, Muchtar A. "Community participation in the realization of good governance in the peaceful village of Watang Sidenreng District, Sidenreng Rappang Regency," *PRAJA: Government Scientific Journal*, vol. 7, no. 3, pp. 88-92. 2019.

[10] Samsudin M. "Analysis of Public Service Performance on Human Resources and Employee Responsiveness in the Kecandran Village Office, Sidomukti District, Salatiga City," *Journal of Education, Humanities and Social Sciences (JEHSS)*, vol. 4, no. 2, pp. 1028-1034. 2021.

[11] Fatona U. "Analysis of the Financial Feasibility of the Rattan Industry (Case Study in Trangsan Village, Gatak District, Sukoharjo Regency)," M.S. thesis, Sebelas Maret University, Central Java, Indonesia, 2018.

[12] Suratiyah K. *Farming Science*, Self-help Spreader, Jakarta, 2015.

[13] Elementary Prastiwi. "Rattan's Trade System In Katingan," *Handep*, vol. 1, no. 1, pp. 35-48. 2017.

[14] Komari A, Indrasari ID, Salsabillah VK. "Analysis of Financial Feasibility for Increasing Production Capacity of Yellow Tofu MSMEs," *Journal of Research and Technology*, vol. 8, no. 1, pp. 149-159. 2022.

[15] Wibisono D, Wicaksana RS, Rusiyono R. "Comparison of Investment Valuation Methods in Capital Budgeting," *Journal of Research in Management Business and Social Science*, vol. 1, no. 1, pp. 25-35. 2023.

[16] Latifah S, Sima HM, Purwoko A. "Study of the Benefits and Economic Feasibility of Suren Cultivation in the Sipolha Horison Village Community, Simalungun Regency, North Sumatra Province," *Journal of Plantation Forest Research*, vol. 17, no. 2, pp. 87-99. 2020.

[17] Hasibuan Daniel. "NPV vs IRR," *Journal of Management and Business*, vol. 1, no. 2, pp. 38-48. 2020.

[18] Ali AN, Tunnisa K. "Application of the DSS Method (Death & IRR) in Determining Complaint Eligibility," *Syntech Journal*, vol. 5, no. 1, pp. 95-102. 2022.

[19] Harso RM, Haribowo R, Yuliani. "Planning for a Clean Water Distribution System in Kemiri Village, Jabung District, Malang Regency," *Journal of Water Resources Technology and Engineering*, vol. 3, no. 1, pp. 410-419. 2022.

[20] Fanani ZA. "Benefit-Cost Analysis in the Construction of Penjaringan Flats Using NPV, IRR, PP, and BCR Methods Using Investment Evaluation Software," *Scientific Journal of Industrial Engineering*, vol. 2, no. 2, pp. 1-8. 2021.

[21] Ambartiasari G, Arfan R. "Analysis of the Efficiency of the Dried Areca Seed Trading System in Kuala Subdistrict, Nagan Raya Regency," *Formosa Journal of Sustainable Research (FJSR)*, vol. 1, no. 3, pp. 275-286. 2022.

[22] Harahap KS, Aulia D. *Trade and Marketing of Fishery Products*, Amafrad press, Jakarta, 2020.

[23] Asmarantaka RW. *Agribusiness Marketing (Agrimarketing)*, Department of Agribusiness FEM-IPB, Bogor, 2012

[24] Situmorang TS, Alamsyah Z, Nainggolan S. "Analysis of Marketing Efficiency of Sweet Sawi Using the Structure, Conduct, Performance (SCP) Approach in South Jambi District, Jambi City," *Socio-Economics of Business*, vol. 18, no. 2, pp. 79-89. 2015.

[25] Supriadi A, Rachman O. "Identification of Patterns and Efficiency of Rattan Trade Administration in Java," *Journal of Forest Products Research*, vol. 19, no. 4, pp. 209-218. 2017.

[26] Irayanti I. "Analysis of Patchouli Trading Channels to Support People's Economy in the View of Islamic Economics in Konawe Regency," *Li Falah Journal of Islamic Economics and Business*, vol. 4, no. 1, pp. 111-128. 2019.

[27] Dinar M, Hasan M. *Introduction to Economics: Theory and Applications*, CV. Nur Lina, Makassar, 2018.

[28] Husna OS, Kurniati D, Hutajulus JP. "Marketing Strategy for Small and Medium Enterprises of Bamboo and Rattan Crafts in Sambas Regency," *Journal of Agricultural Economics and Agribusiness*, vol. 6, no. 4, pp. 1405-1415. 2022.