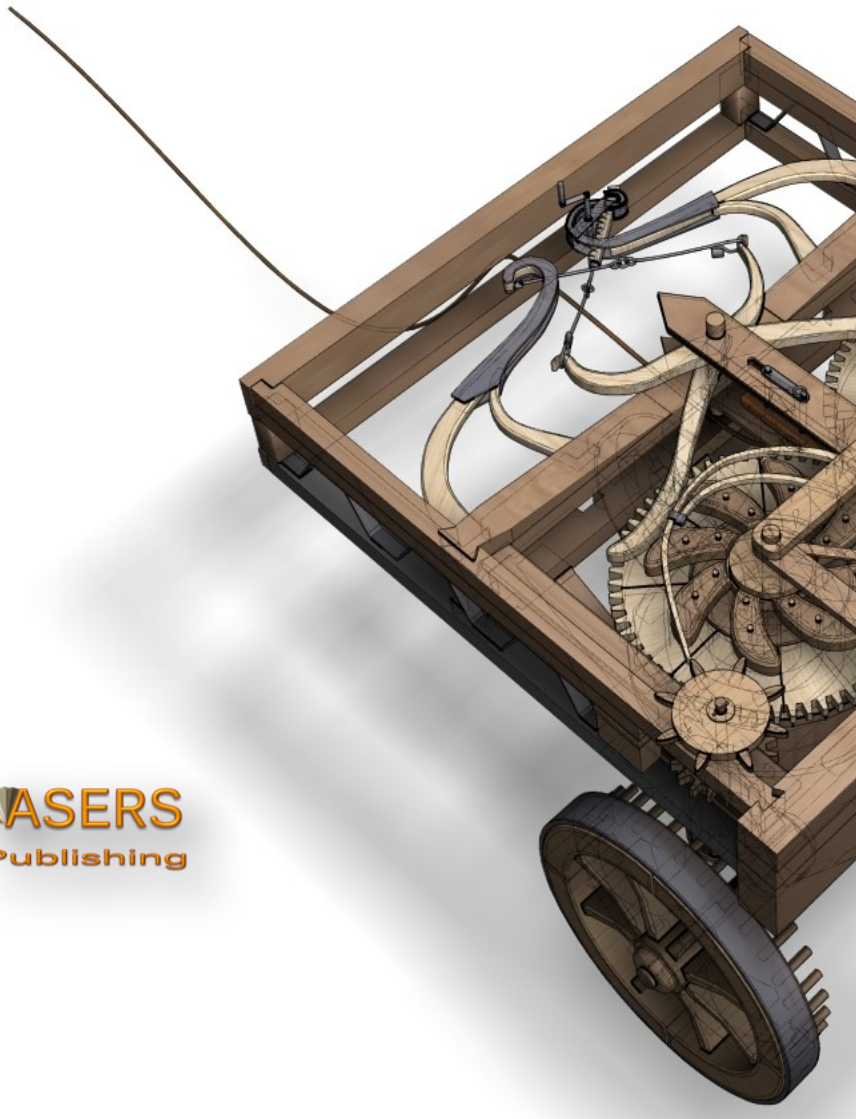
Theoretical and Practical Research in Economic Fields



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Volume XV, Issue 2(30), Summer 2024
Theoretical and Practical Research in Economic Fields

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Practical Marketing System as a Solution to Limited Labor and Post-Harvest Processing Areas for Rice

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Abstract: *The majority of rice farmers in Denpasar City chose a practical marketing system, this system implements rice sales based on estimated production results. Farmers generally sell their produce when the rice is approaching harvest time. The buyer determines the purchase price for rice by estimating the number of transaction objects after carefully observing and viewing the rice to be harvested. With this system, farmers no longer need to think about the availability of labor to harvest, transport the harvest home, dry the grain until it reaches a certain level of dryness. The novelty of this research is conducting in-depth research on the practice of buying and selling rice using a practical marketing system in Denpasar City. This research will also examine in depth the practical marketing system from two sides, namely from the perspective of farmers and buyers. The results of this research reveal that the practice of buying and selling rice using a practical marketing system in Denpasar City involves farmers as sellers and buyers who are usually called penebas. The reason why farmers choose a practical marketing system is that this system is considered more profitable for farmers with all the limitations of farming in urban areas, where farmers only need to care for the rice they plant until it is ready to harvest.*

Keywords: city; rice farming; practical marketing; estimated price; harvest.

JEL Classification: J01; Q13; Q21; R11.

Introduction

Research results regarding farmer decision-making are closely related to rational action. Schoolman *et al.* (2021) stated that the different considerations of farmers in Michigan and Ohio influence the choice of how to market their products, farmers who prioritize community involvement and community institutions are more likely to market food through local institutions while farmers who have a relatively strong sense of responsibility for the environment generally tend not to participate in the local food system. Huber *et al.* (2018) concluded that factors such as non-agricultural activities, heterogeneous household and family characteristics, and the need for short-term and long-term decision-making simultaneously influence the way farmers in Europe make decisions in marketing their products. Abacı and Demiryürek (2019) add that not only marketing, but the selection of products to be produced by farmers in Turkey is also influenced by farmers' rational considerations regarding product characteristics, physical characteristics, farming characteristics, natural factors, irrigation, and labor.

Farmers generally act rationally in marketing their rice crops. Farmers in Denpasar City generally sell their crops based on production estimates (Suardi *et al.* 2023). Farmers generally sell their produce when the rice is approaching harvest time. The buyer determines the purchase price for rice by estimating the number of transaction objects after carefully observing and viewing the rice to be harvested. With this system, farmers no longer need to think about the availability of labor to harvest, transport the harvest home, dry the grain until it reaches a certain level of dryness so that it is suitable for storage, then provide a place to store the rice harvest. This system makes it easier for farmers because farmers directly receive the harvest (in the form of money or rice). After all, the harvesting process is carried out by the buyer.

The number of young farmers continues to decline, both relatively and absolutely, then on the other hand the increasing number of older farmers shows the rice farming that is currently happening in Denpasar City. These problems have an impact on physical strength and it is difficult to find workers. The harvesting process requires physical strength and quantity of rice harvesting workers. Suess-Reyes and Fuetsch (2016); Bilewicz and Bukraba-Rylska (2021); K. Brown *et al.* (2021) said that the decline in the number of young farmers was also occurring in Europe and Australia, which was caused by a combination of social factors (erosion of community life, conflict between entrepreneurial farmers and small farmers, as well as increasing distrust, economic, environmental and institutional challenges. Balezentis *et al.* (2020) reported that the influence of the Young Farmers' Support policy implemented by the European government had a positive impact on the existence of young farmers, especially small farmers in Lithuania. May *et al.* (2019) stated that this policy was also concluded to have a positive impact on farmer regeneration.

Furthermore, May *et al.* (2019) stated that other factors that influence the will of young farmers are pessimism towards agriculture, community and family integration, participation in decision-making, and neighbors' opinions. Wójcik *et al.* (2019); Sroka *et al.* (2019); Coopmans *et al.* (2021), adds that other factors that influence the willingness of young farmers are the availability of land and family, agricultural characteristics (agricultural land area and economic size) and manager characteristics, including education. Yeboah *et al.* (2020) argued that farmer regeneration is important to improve the village economy in Africa. Góngora Pérez *et al.* (2020); and Grubbström and Eriksson (2018) also stated that the younger generation in agriculture plays a role in maintaining the sustainability of agricultural activities and strengthening the provision of healthy products for human consumption.

The limited availability of agricultural labor and harvesting support facilities means that the role of buyers with an assessment system is very much needed by farmers because farmers do not need to pay harvest costs or labor costs (Suamba *et al.* 2023). This system is considered practical because farmers get their production results in the form of money directly. An estimation system (estimate) is carried out by sellers and buyers of all rice products by looking at and circling the rice fields to interpret the total amount of rice harvest before harvest. This system allows for speculation by both parties because the quantity and quality of rice are not yet known and the correctness of the calculations without perfect measurements.

The study by Nurliza (2023) in Indonesia shows that the relationship between income and characteristics of small rubber farmers regarding cultivation and income from post-harvest management is not significant. Furthermore, Kaminski & Christiaensen (2014) stated that annual adjustments in Africa were necessary to avoid underestimating or underestimating total losses in agricultural land. Based on this, this is one of the risks for buyers using the harvest estimation system because the quantity and quality of rice is not yet clearly known before harvest.

Research carried out in-depth on the practice of buying and selling rice with a practical and effective marketing system in Denpasar City is new in this research. The novelty of this study lies in conducting in-depth

research on the practice of buying and selling rice using a practical marketing system in Denpasar City. The study also examines the practical marketing system from the perspectives of both farmers and buyers. This research is important as it provides a comprehensive understanding of the practical marketing system in rice farming, particularly in urban areas with limited availability of agricultural labor and limited area for post-harvest processing. Additionally, this study addresses the challenges faced by rice farmers and buyers in Denpasar City, offering insights into decision-making, risk management, and the dynamics of the practical marketing system.

1. Literature Review

Wati *et al.* (2021) farmer regeneration is one of the most critical factors in ensuring agricultural sustainability. The agricultural sector requires production personnel who are skilled, professional, and able to utilize technological developments. The low availability of agricultural resources is one of the factors for the slow renewal of Indonesian farmers. This condition is not only caused by agricultural knowledge that has yet to be passed on to the younger generation by parents or the community. But there are other things, such as changes in family, school, farming, and non-agriculture, which alienate the younger generation from their environment. Susilowati (2016) adds that the low interest of the younger generation is also caused by the image of the agricultural sector, which is less prestigious, high-risk and does not guarantee income levels, stability, and continuity; low average land ownership; diversification of non-agricultural businesses and agricultural industries in underdeveloped/underdeveloped villages; standard agricultural management; no particular incentive policies for young/starting farmers; and changes in the perspective of young people in the current postmodern era.

Taufiqurrohman and Jayanti (2022) explained that the Thai concept supporting farmer renewal can be applied to Indonesia. This is due to the existence of serious social problems for Indonesian farmers. There are three concepts, namely the provision of fertile land ready for harvest, available financing, and efforts to advance the agricultural profession in a positive and mutually sustainable manner, which must be translated into a regulatory framework to revitalize Indonesian farmers. Furthermore, Ranzez *et al.* (2020) added that the parents' role could also support farmers' regeneration as an external factor.

The novelty of this research is conducting in-depth research on the practice of buying and selling rice using a practical marketing system in Denpasar City. This research will also examine in depth the practical marketing system from two sides, namely from the perspective of farmers and buyers. It is hoped that the results of the research will provide a comprehensive picture of the practical marketing system in rice farming so that various controversies regarding the existence of buyers in the practical marketing system can be answered clearly.

2. Method

This research is located in Denpasar City, Bali Province. Based on initial observations, this research uses 36 Subaks as research objects out of a total of 41 Subaks in Denpasar City. This is because the other 5 Subaks do not grow rice and Subak members do not use the slashing system. According to Lanya *et al.* (2015), All rice fields in Bali are part of the Subak organizational system. The Subak organizational system is agreed to belong to the Balinese traditional community which is recognized nationally in Indonesia and is considered a world cultural heritage.

The population in this study were all farmers who were members of 36 Subaks in Denpasar City. The total number of farmer respondents taken was 318 farmers, who implemented a practical marketing system. Apart from farmers, this research also took 40 rice buyers as respondents. This research also included 36 Subak Chairmen as respondents. The data collection method used in this research is a survey and structured interviews, namely interviews using instruments using prepared questionnaires. This research uses four variables with 42 indicators.

The first objective of this research was analyzed using descriptive analysis methods. Descriptive analysis in objective one is based on the views and thoughts of farmers in Denpasar City as the research object and looks as closely as possible at the study target in its current conditions. In this research, quantitative data was also collected. The quantitative data collected will be used to support qualitative analysis.

The second objective of this research was analyzed using a descriptive analysis method using the Guttman scale to determine the basis for farmers' decision-making in choosing a slashing system in Denpasar City in terms of eight bases, namely intuition, experience, data, research, standards, facts, authority, and logical/rational. Objectives three and four in this research were analyzed using qualitative and quantitative descriptive analysis methods. The presentation of data for objectives three and four will be presented in table form (simple tabulation) so that it is easy to understand the aspects studied. Before analysis, all data obtained is

checked to minimize the possibility of errors or follow editing, coding, and tabulation procedures. Objective five is to create a practical marketing system model for rice farming in urban areas. In preparing the model, it is focused on the findings of objectives one, two, three, and four.scale.

3. Research Results

3.1 Rice Buying and Selling Practices with a Practical Marketing System

Buyers play a role in determining the harvest time of the rice they buy (Darmawan *et al.* 2023). The buyer will conduct a survey of the farmer's lands that will be targeted when the harvest season arrives. Buyers will make considerations based on the area of land, and the condition of the rice and make comparisons with information obtained from farmers regarding previous harvest results. The survey carried out will determine the buyer's decision as to whether the land is suitable for purchasing the harvest or not. If the survey results are considered profitable, the buyer will convey the estimated price to the farmer who owns the land. (Britos *et al.* 2022; Sroka *et al.* 2019) Important price estimates are also based on the level of land distortion with the market and road accessibility.

In interpreting the purchase price, apart from looking at the area of land which is generally calculated per unit acre, and the condition of the rice, the harvester also takes into account the labor wages that must be paid at the time of harvest. This is because it is the slasher who provides the labor for the harvesting process. (Promkhambut *et al.* 2023) concluded five factors causing the success of small farmers in Thailand in maintaining their land, namely access to resources, labor in the agricultural sector, agricultural inputs, agricultural funding, and government support. Zou *et al.* (2018) stated that the limited workforce/subsequent farmers caused a decrease in the number of workers, but the grain subsidy policy by the government in China caused an increase in land rental by older farmers. Furthermore, Blanc *et al.* (2008) stated that the increase in farmers choosing to hire labor to work on their land and the constant number of workers led to a slight increase in labor wages in Europe. Farmers certainly have an important role in ensuring that the harvest is good. Farmers prefer to use a practical marketing system to sell their crops because the buyer pays all expenses, and the farmer only receives net money from the harvest. Farmers save energy because they no longer need to dry rice and do not need to supervise the rice harvesting process in the fields.

The assessment time carried out by buyers before determining the price to be offered to farmers is quite varied. This depends on several factors, including the rice variety planted by the farmer and the season. The assessment time by buyers before harvest is quite varied. 66.7% of buyer respondents carry out an assessment 7-14 days before harvest. The majority of farmer respondents contacted buyers without going through the Head of Subak. Meanwhile, several respondents met, and farmers needed the Subak Chair's help to contact buyers. Most buying and selling transactions between farmers and buyers are not outlined in written agreements, this is because the transactions carried out are based on the farmer's sense of trust in the buyer. Most of the transactions carried out by respondents were in the form of cash, and transactions were also found in the form of rice obtained from milling grain. The transaction that occurs will be tied to the buyer giving an advance payment to the farmer. The range of down payments given depends on the size of the land.

The conflicts that occur are quite diverse, conflicts caused by climate or weather factors, conflicts originating from buyers, and several other conflicts. Conflicts related to payment problems by buyers to farmers, conflicts related to harvesting schedules that are later than the agreed schedule. Buyers do not make payments to farmers and buyers also delay payment in full to farmers. The price agreed at the beginning is not the same as the final price paid to the farmer. This is because buyers are dissatisfied with the harvest results. Even though the harvest results did not match what was expected, this occurred due to pests and disease.

3.2 Basic Decision-Making for Farmers in Choosing a Practical Marketing System

When making decisions, it is very necessary to consider things well and clearly. The basis for the decision-making of respondent farmers in Denpasar City in choosing a practical marketing system can be seen in Table 1.

Farmers choose to use a practical marketing system for various reasons. The lack of availability of labor, costs and time to harvest encourage farmers to choose this system. Cost is an obstacle in harvesting because farmers have to pay for labor costs, post-harvest costs, and the tools needed for harvesting. If farmers directly harvest and market independently, farmers need to provide a place for drying and storing the harvested grain. Farmers who have side jobs tend to lack time to carry out harvest activities, especially if the harvest season is close to religious ceremonies. With this system, farmers feel it is more practical, the process is shorter and the capital used for farming is returned more quickly through purchasing the harvest. According to SHI *et al.* (2021),

This decision is quite appropriate considering that farmers in China prefer to use machines in farming, but it turns out that mechanization in the rice harvesting phase is inefficient, mechanization also becomes inefficient when applied to small-scale agricultural land. The same thing has also been reported by Hormozi *et al.* (2012) where harvesting rice using machines in Iran is equivalent to paying manual labor wages, and large investments are also required if farmers harvest their rice. Research conducted by Klein (2015) in America stated that the patterns they had learned came from sufficient experience in the decision-making process.

Table 1. The basis for farmers' decision making in choosing a slashing system

No	Basis for Farmer Decision Making	Amount	
		Yes (person)	No (person)
1.	Intuition	302	16
2.	Experience	312	6
3.	Data	178	140
4.	Research	6	312
5.	Standard	131	187
6.	Fact	300	18
7.	Authority	65	253
8.	Logic	295	23

Source: Processed from Primary Data 2023

Prakris marketing system, farmers do not need to work more to market their crops. Farmers are only responsible until the rice is ready to harvest. The risk of crop failure or other problems after harvest will be minimized. As many as 55.97% of farmer respondents thought that data was one of the bases for making decisions. The data referred to in this research is data in the form of notes that the marketing system is practically good. Farmers who do not have a record of a good practical marketing system, only remember the estimated rice sales results in the drain and rainy season. This statement is supported by research conducted by Janssen *et al.* (2017) which reveals that an organization is harnessing the power of big data to improve its decision-making.

As many as 94.34% of farmer respondents stated that facts were one of the bases for decision-making. Research conducted by Harenčárová (2017) in Slovakia demonstrates that facts are the basis for decision-making by using their own experiences to inform decisions. Currently, most of the work as farmers is done by people in the elderly category, where this age category is not a productive age. Other facts about the relatively small capital and land area are also the driving reasons for choosing this system so that it is more profitable. Farmers find it practical; they are paid in cash after harvest and farmers don't need to bother carrying out marketing activities.

3.3 Practical Marketing System Viewed from The Buyer's Side

A practical marketing system is a practical system because farmers only need to care for the rice they plant until it is ready to harvest. Farmers also don't need to bother looking for workers or paying for freight and transportation costs to get to the planting site. Akite *et al.* 2022 also concluded that labor wages and access to markets are the biggest costs in the rice cultivation process in Uganda. Apart from that, remember that most farmers are elderly people who are no longer productive. Old farmers prefer to grow crops based on their habits, so there is less technological adaptation and innovation, apart from that, physical and health problems also limit the productivity of old farmers. On the other hand (P. Brown *et al.* 2019) stated that young farmers have the weakness of being less risk averse, more influenced by social norms, and less focused on finances. On the contrary, research carried out by (Pindado *et al.* 2018) concluded that age does not affect the technological adaptation and innovation of farmers in Europe. Kyire *et al.* (2023) stated that the intensity of implementing risk management instruments is influenced by the farmer's age, farming experience, land ownership system, access to extension, total agricultural land area, and erratic rainfall.

The rice farmers who were respondents were constrained by a limited area for drying rice. The necessities of life require farmers to get money as soon as possible from the rice they plant. Farmers also get capital loans from buyers, so that when the harvest arrives the farmer will get money from the buyer. The availability of labor for the harvesting process is quite limited so rice farmers are the respondents of this system. Farmers find it difficult to find workers because there are no funds available to find contract workers and laborers. Access to credit has a positive impact on the productivity of small farmers in developing countries, with gains of 15%. Acclassato Houensou *et al.* (2021) stated that Small managed to achieve a 13% increase in productivity in

Benin. Fauziana *et al. (*2023) add that other factors that also need to be considered are funds, human resources, and infrastructure.

The research results obtained data that the majority of rice farmers who were respondents, namely 38.68%, had used this system for 4 to 10 years. The relationship between farmers and buyers nowadays is increasingly difficult to separate. Abebe *et al.* (2016) found that farmers in Ethiopia can earn up to 225% higher gross profits if they sell their products without intermediaries. However, most farmers still trade through intermediaries because they guarantee minimum quantity and quality, and to reduce operational costs. Second, personalized relationships. Third, trade through intermediaries can increase the commercialization of smallholder farmers by connecting low-resource farmers with traders and final markets.

Several other aspects can describe the slashing system from the farmer's perspective which can be seen in Table 2. As many as 100% of respondent farmers stated that there were no local regulations regarding practical marketing systems. The absence of regulations regarding practical marketing systems applies both at the farmer, sub-district, and Denpasar City levels to the national level.

Table 2. Practical marketing system from the farmer's side

No	Practical marketing system from the farmer's side	Farmers (person)	
		Yes	No
1	There are local regulations regarding practical marketing systems	0	318
2	After the transaction (agreement) occurs, is there an obligation for the farmer to care for or manage it until the rice is harvested by the buyer	310	8
3	Choose practical marketing to avoid/minimize the risk of decreasing production quantity and quality	83	235
4	Practical marketing system makes it easier for farmers in the harvesting and marketing process	207	111

Source: Processed from Primary Data 2023

As seen in Table 2, as many as 73.90% of respondent farmers chose this system to avoid or minimize risks. Approaching the harvest period, challenges in the form of pest and disease attacks have become common things faced by farmers. Grasshoppers, rats and grasshoppers, birds, crabs, snails, bedbugs, white butterflies, grasshoppers, stem borers, cut-neck disease, plant hoppers, wither wilt, and tungro virus are pests and diseases that usually attack the rice of respondent farmers. Islam *et al.* (2020) reported the results of a farmer survey in Bangladesh where farmers' limited knowledge regarding disease management caused significant crop yield losses. Akhtar *et al.* (2018) stated that most farmers in Punjab Province, Pakistan are inherently risk averse and view price, biological factors, and climate as potential sources of risk for their agricultural businesses. So are Mbah *et al.* (2023) stated that farmers in Cameroon tend to choose to avoid production risks, further explaining that gender, experience, and employment status also significantly influence decision-making in the agricultural sector.

3.4 Practical Marketing System Model in Rice Farming in Urban Areas

In a practical marketing system, farmers sell their rice by offering it to buyers directly. This is done because farmers have subscribed to buyers who usually buy in their respective areas. Munyimi & Chari (2018) revealed that in Zimbabwe, an important phenomenon related to buyer-seller relationships is that many procurement companies are developing single-source suppliers due to pressure to improve quality, reduce inventory, develop just-in-time systems, and reduce time to market. In general, farmers directly call or contact buyers who have become their customers. Kumarathunga *et al.* (2022) stated that the technological approach in marketing small-scale farmers' products in particular can increase farmers' financial profits because they can interact directly. Well-managed technology can also build trust between farmers and buyers and reduce risks associated with transactions, empowering unknown parties to transact. A study by Pikhart (2020) conducted in the Czech Republic shows that currently mobile devices are used in several multinational and small and medium-sized companies in business communications. Ajumobi & Kyobe (2017) add a language in South Africa that, by aligning human competencies, mobile phone technology, and the right business strategy, can lead its business to better performance.

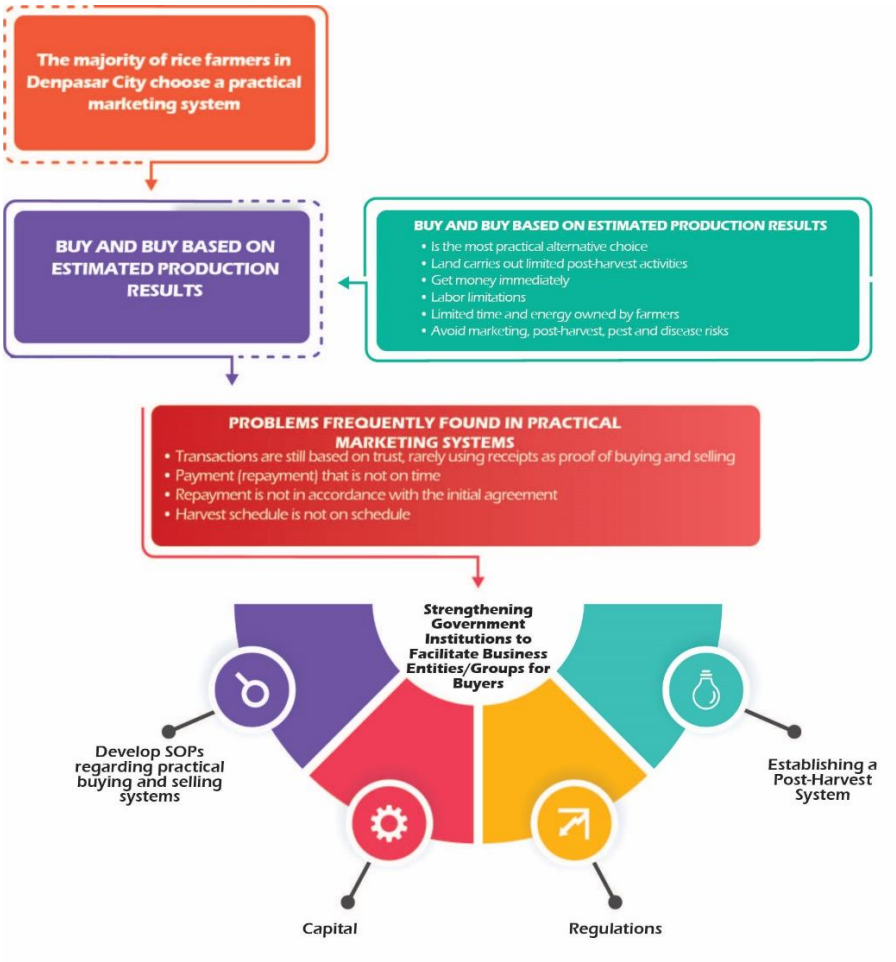
The research results also found buyers looking directly to the production source to offer a practical marketing system. One of the factors that encourages buyers to look directly to production sources is that there is quite tight competition between buyers. Buyers need to confirm the price of rice directly to farmers by checking the quality and quantity of rice in the fields. By visiting farmers directly, the bargaining process will be easier. This

is supported by research results by Mukoviz *et al.* (2022) carried out in Ukraine, which shows that at the same time, in the process of economic activity (buy/sell transactions), each agricultural producer incurs transaction costs that have a significant impact on the company's financial condition. Based on this, it is important to carry out field survey activities to determine the purchase/sale price.

Most of the transactions in this system are converted into money, but transactions are also found in the form of wet grain which will then be dried first, although in the end it is still converted into cash. Of all the buyers who were respondents, there were only two buyers whose transactions were in the form of dry grain because they had private RMUs. Estimates and determination of average prices are carried out 10 to 20 days before harvest when the rice starts to turn yellow. The reason buyers determine their estimates in this time range is because buyers need to see the condition of the rice in the field so they can estimate the production of the rice they want to buy. There is also another factor, namely competition that occurs between buyers so that the assessment can take precedence, some even up to 30 days before harvest.

In determining the purchase price, the buyer uses a calculation where the rice output is multiplied by the price of grain prevailing on the market, then this result is reduced by labor costs. The transaction price is determined by taking into account the land area and various costs incurred such as operational costs, labor costs, and maintenance costs. In the process of determining prices, bargaining or price negotiation occurs between buyers and farmers. Bargaining is carried out to reach an agreement on the nominal price of rice per land area.

Figure 1. Practical marketing system model in rice farming in urban areas



Source: Processed from Primary Data 2023

Based on research results, there have been conflicts between buyers and farmers. When the buyer has paid in full according to the agreed price and amount, the farmer declares a deficiency in the nominal amount of money handed over after the transaction is completed. Another conflict is when the farmer has paid the DP, but the rice that has been paid the DP is resold by the farmer to another buyer. Conflicts were also found between farmers and workers employed to harvest by buyers. Study (Nguyen *et al.* 2021) implemented in Vietnam showed that

the majority of participants (36%) supported the deposit (DP/down payment) scheme. The DP system plays a very important role in buying and selling transaction activities to bind an agreement between the seller and the buyer.

This practical marketing system is a speculative decision considering the many risks faced by buyers. These profits and losses cannot be predicted considering that natural factors are the main factors determining the condition of rice. During the rainy season, the rice will collapse and the grain will become wet, which is a potential loss. Other risks include the presence of diseases such as viruses and pests such as planthoppers, mice, and birds which result in less dense rice.

Conclusions

The practice of buying and selling rice using a practical marketing system in Denpasar City involves farmers as sellers and buyers who are usually called penebas. Starting the process from a practical marketing system, buyers play the role of interpreting prices and determining the harvest time of the rice they buy and farmers act as producers who sell their harvest (still on the tree) to buyers so that the distribution flow of the harvest can run practically. The reason why farmers choose a practical marketing system is that this system is considered more profitable for farmers with all the limitations of farming in urban areas, where farmers only need to care for the rice they plant until it is ready to harvest. Farmers do not need to look for workers, or pay for transport costs and transportation used to get to the planting site.

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Ni Made Classia Sukendar: Writing – review and editing, Data curation;
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Anak Agung Keswari Krisnandika: Validation, Data curation, Writing – review and editing;
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References

[1] Abacı, N. İ., and Demiryürek, K. 2019. Turkish Journal of Agriculture - Food Science and Technology Factors Affecting Farmers ' Decision Making on Product Pattern : A Case of Vegetable Producers in Bafra District of Samsun Province, Turkey Çiftçilerin Ürün Desenlerine Karar Vermelerini Etkileyen Faktörler : Samsun İli Bafra İlçesi Sebze Yetiştiricileri Örneği, 7(3): 426–434.

[2] Abebe, G. K., Bijman, J., and Royer, A. 2016. Are middlemen facilitators or barriers to improve smallholders' welfare in rural economies? Empirical evidence from Ethiopia. *Journal of Rural Studies*, 43: 203–213. DOI:https://doi.org/10.1016/j.jrurstud.2015.12.004

[3] Acclassato Houensou, D., Goudjo, G. G., and Senou, M. M. 2021. Access to finance and difference in family farm productivity in Benin: Evidence from small farms. *Scientific African*, 13: e00940. DOI:https://doi.org/10.1016/j.sciaf.2021.e00940

[4] Ajumobi, D. O., and Kyobe, M. 2017. Alignment of human competencies with mobile phone technology and business strategies by women-led smes in South Africa. *Electronic Journal of Information Systems in Developing Countries*, 80(1): 1–25. DOI: https://doi.org/10.1002/j.1681-4835.2017.tb00592.x

[5] Akhtar, S., *et al.* 2018. Factors influencing hybrid maize farmers' risk attitudes and their perceptions in Punjab Province, Pakistan. *Journal of Integrative Agriculture*, 17(6): 1454–1462. DOI:https://doi.org/10.1016/S2095-3119(17)61796-9

[6] Balezentis, T., *et al.* 2020. Young farmers' support under the Common Agricultural Policy and sustainability of rural regions: Evidence from Lithuania. *Land Use Policy*. DOI:10.1016/j.landusepol.2020.104542

[7] Bilewicz, A., and Bukraba-Rylska, I. 2021. Deagrarianization in the making: The decline of family farming in central Poland, its roots and social consequences. *Journal of Rural Studies*, 88(July): 368–376. DOI:https://doi.org/10.1016/j.jrurstud.2021.08.002

[8] Blanc, M., Cahuzac, E., Elyakime, B., and Tahar, G. 2008. Demand for on-farm permanent hired labour on family holdings. *European Review of Agricultural Economics*, 35(4): 493–518. DOI:https://doi.org/10.1093/erae/jbn032

[9] Britos, B., Hernandez, M. A., Robles, M., and Trupkin, D. R. 2022. Land market distortions and aggregate agricultural productivity: Evidence from Guatemala. *Journal of Development Economics*. DOI:10.1016/j.jdeveco.2021.102787

[10] Brown, K., Schirmer, J., and Upton, P. 2021. Regenerative farming and human wellbeing: Are subjective wellbeing measures useful indicators for sustainable farming systems? *Environmental and Sustainability Indicators*. DOI: https://doi.org/10.1016/j.indic.2021.100132

[11] Brown, P., Daigneault, A., and Dawson, J. 2019. Age, values, farming objectives, past management decisions, and future intentions in New Zealand agriculture. *Journal of Environmental Management*. DOI:https://doi.org/10.1016/j.jenvman.2018.10.018

[12] Coopmans, I., *et al.* 2021. Understanding farm generational renewal and its influencing factors in Europe. *Journal of Rural Studies*, 86: 398–409. DOI: https://doi.org/10.1016/j.jrurstud.2021.06.023

[13] Darmawan, D.P. *et al.* 2023. Farmers' Motivation and Obstacles in the Smallest Available Agricultural Region. *Global Journal of Environmental Science and Management,* 9 (4): 967–82. DOI:https://doi.org/10.22035/gjesm.2023.04.20

[14] Fauziana, D. R., Marimin, Suwarsinah, H. K., and Prasetio, E. A. 2023. What factors impact the adoption of postharvest loss-reduction technologies in mangosteen supply chain? *Journal of Open Innovation: Technology, Market, and Complexity*, 9(3): 100102. DOI: https://doi.org/10.1016/j.joitmc.2023.100102

[15] Góngora Pérez, R. D., Milán Sendra, M. J., and López-i-Gelats, F. 2020. Strategies and drivers determining the incorporation of young farmers into the livestock sector. *Journal of Rural Studies*, 78(June): 131–148. DOI: https://doi.org/10.1016/j.jrurstud.2020.06.028

[16] Grubbström, A., and Eriksson, C. 2018. Retired Farmers and New Land Users: How Relations to Land and People Influence Farmers' Land Transfer Decisions. *Sociologia Ruralis*, 58(4). DOI: 10.1111/soru.12209

[17] Harenčárová, H. 2017. Managing Uncertainty in Paramedics' Decision Making. *Journal of Cognitive Engineering and Decision Making*, 11(1): 42–62. DOI: https://doi.org/10.1177/1555343416674814

[18] Hormozi, M. A., Asoodar, M. A., and Abdeshahi, A. 2012. Impact of Mechanization on Technical Efficiency: A Case Study of Rice Farmers in Iran. *Procedia Economics and Finance*, 1(12): 176–185. DOI:https://doi.org/10.1016/s2212-5671(12)00021-4

[19] Huber, R., *et al.* 2018. Representation of decision-making in European agricultural agent-based models. Agricultural Systems, 167: 143–160. DOI: https://doi.org/10.1016/j.agsy.2018.09.007

[20] I.D.P.O.Suardi, Widhianthini, G.M.K. Arisena, I.M. Sukewijaya, and A.A.K. Krisnandika. 2023. Status of Agriculture Resources Sustainability and Agricultural Policy in Denpasar City, Province of Bali, Indonesia. *African Journal of Food, Agriculture, Nutrition and Development*, 23 (3): 22694–710. DOI:https://doi.org/10.18697/ajfand.118.21875.

[21] Islam, A. H. M. S., Schreinemachers, P., and Kumar, S. 2020. Farmers' knowledge, perceptions and management of chili pepper anthracnose disease in Bangladesh. *Crop Protection*, 133. DOI:https://doi.org/10.1016/j.cropro.2020.105139

[22] Janssen, M., van der Voort, H., and Wahyudi, A. 2017. Factors influencing big data decision-making quality. *Journal of Business Research*, 70: 338–345. DOI: https://doi.org/10.1016/j.jbusres.2016.08.007

[23] Kaminski, J., and Christiaensen, L. 2014. Post-harvest loss in sub-Saharan Africa-what do farmers say? *Global Food Secur.,* 3(3–4): 149–158. DOI: https://doi.org/10.1016/j.gfs.2014.10.002

[24] Klein, G. 2015. A naturalistic decision making perspective on studying intuitive decision making. *Journal of Applied Research in Memory and Cognition*, 4(3): 164–168. DOI:https://doi.org/10.1016/j.jarmac.2015.07.001

[25] Kumarathunga, M., Calheiros, R. N., and Ginige, A. 2022. Smart Agricultural Futures Market: Blockchain Technology as a Trust Enabler between Smallholder Farmers and Buyers. *Sustainability* (Switzerland), 14(5). DOI: https://doi.org/10.3390/su14052916

[26] Kyire, S. K. C., *et al.* 2023. Perceived risk and risk management strategies under irrigated rice farming: Evidence from Tono and Vea irrigation schemes-Northern Ghana. *Journal of Agriculture and Food Research*, 12. DOI: https://doi.org/10.1016/j.jafr.2023.100593

[27] Lanya, I., Subadiyasa, N. N., Sardiana, K., and Adi, G. P. R. 2015. Numerical Classification, Subak Zoning and Land Transfer Function Rice Field in the Province of Bali Based on Remote Sensing and GIS. *Procedia Environmental Sciences*, 24: 47–55. DOI: https://doi.org/10.1016/j.proenv.2015.03.008

[28] May, D., Arancibia, S., Behrendt, K., and Adams, J. 2019. Preventing young farmers from leaving the farm: Investigating the effectiveness of the young farmer payment using a behavioural approach. *Land Use Policy*, 82. DOI: https://doi.org/10.1016/j.landusepol.2018.12.019

[29] Mbah, L. T., Molua, E. L., Bomdzele, E., and Egwu, B. M. J. 2023. Farmers' response to maize production risks in Cameroon: An application of the criticality risk matrix model. *Heliyon*, 9(4). DOI:https://doi.org/10.1016/j.heliyon.2023.e15124

[30] Mukoviz, V., Leshchii, L., Khodakivska, O., Prokopova, O., and Kuzub, M. 2022. Accounting for Transactions Costs of Agricultural Producers in the Shadow Economy. *Agricultural and Resource Economics*, 8(2): 67–85. DOI: https://doi.org/10.51599/are.2022.08.02.04

[31] Munyimi, T. F., and Chari, D. F. 2018. The role of buyer–supplier relationships in achieving economic sustainability in the private telecommunication sector in Zimbabwe. *Cogent Business and Management*, 5(1): 1–11. DOI: https://doi.org/10.1080/23311975.2018.1540917

[32] Nguyen, H. T. T., Lee, C. H., and Hung, R. J. 2021. Willingness of end users to pay for e-waste recycling. *Global Journal of Environmental Science and Management*, 7(1): 47–58.

[33] Nurliza. 2023. The effect of income and smallholder characteristics on cultivation, harvesting, and post-harvest management of natural rubber. *Global Journal of Environmental Science and Management*, 9(4): 983–994. DOI: https://doi.org/10.22035/gjesm.2023.04.21

[34] Pikhart, M. 2020. The Use of Mobile Devices in International Management Communication: Current Situation and Future Trends of Managerial Communication. *Procedia Computer Science*, 171(2019): 1736–1741. DOI:https://doi.org/10.1016/j.procs.2020.04.186

[35] Pindado, E., Sánchez, M., Verstegen, J. A. A. M., and Lans, T. 2018. Searching for the entrepreneurs among new entrants in European Agriculture: the role of human and social capital. *Land Use Policy*, 77(May): 19–30. DOI: https://doi.org/10.1016/j.landusepol.2018.05.014

[36] Promkhambut, A., *et al.* 2023. Rethinking agrarian transition in Southeast Asia through rice farming in Thailand. *World Development*, 169: 106309. DOI: https://doi.org/10.1016/j.worlddev.2023.106309

[37] Schoolman, E. D., Morton, L. W., Arbuckle, J. G., and Han, G. 2021. Marketing to the foodshed: Why do farmers participate in local food systems? *Journal of Rural Studies*, 84(May): 240–253.

[38] Shi, Min, Krishna P. Paudel, and Feng bo Chen. 2021. "Mechanization and Efficiency in Rice Production in China." Journal of Integrative Agriculture 20 (7). DOI: https://doi.org/10.1016/S2095-3119(20)63439-6.

[39] Sroka, W., Dudek, M., Wojewodzic, T., and Król, K. 2019. Generational changes in agriculture: The influence of farm characteristics and socio-economic factors. *Agriculture* (Switzerland), 9(12): 1–27. DOI:https://doi.org/10.3390/agriculture9120264

[40] Suamba, I. K., *et al.* 2023. The Subak-Based Agro-Tourism Management Model in the World Cultural Heritage Area of Catur Angga Batukaru Tabanan Regency, Bali Province, Indonesia. *African Journal of Food, Agriculture, Nutrition and Development,* 23 (2): 22534–47. DOI:https://doi.org/10.18697/ajfand.117.21970

[41] Suess-Reyes, J., and Fuetsch, E. 2016. The future of family farming: A literature review on innovative, sustainable and succession-oriented strategies. *Journal of Rural Studies*, 47: 117–140.

[42] Wójcik, M., Jeziorska-Biel, P., and Czapiewski, K. 2019. Between words: A generational discussion about farming knowledge sources. *Journal of Rural Studies*, 67(May 2018): 130–141. DOI:https://doi.org/10.1016/j.jrurstud.2019.02.024

[43] Yeboah, T., *et al.* 2020. Hard work and hazard: Young people and agricultural commercialisation in Africa. *Journal of Rural Studies*, 76(March): 142–151. DOI: https://doi.org/10.1016/j.jrurstud.2020.04.027

[44] Zou, B., Mishra, A. K., and Luo, B. 2018. Aging population, farm succession, and farmland usage: Evidence from rural China. *Land Use Policy*, 77(May): 437–445. DOI: https://doi.org/10.1016/j.landusepol.2018.06.001

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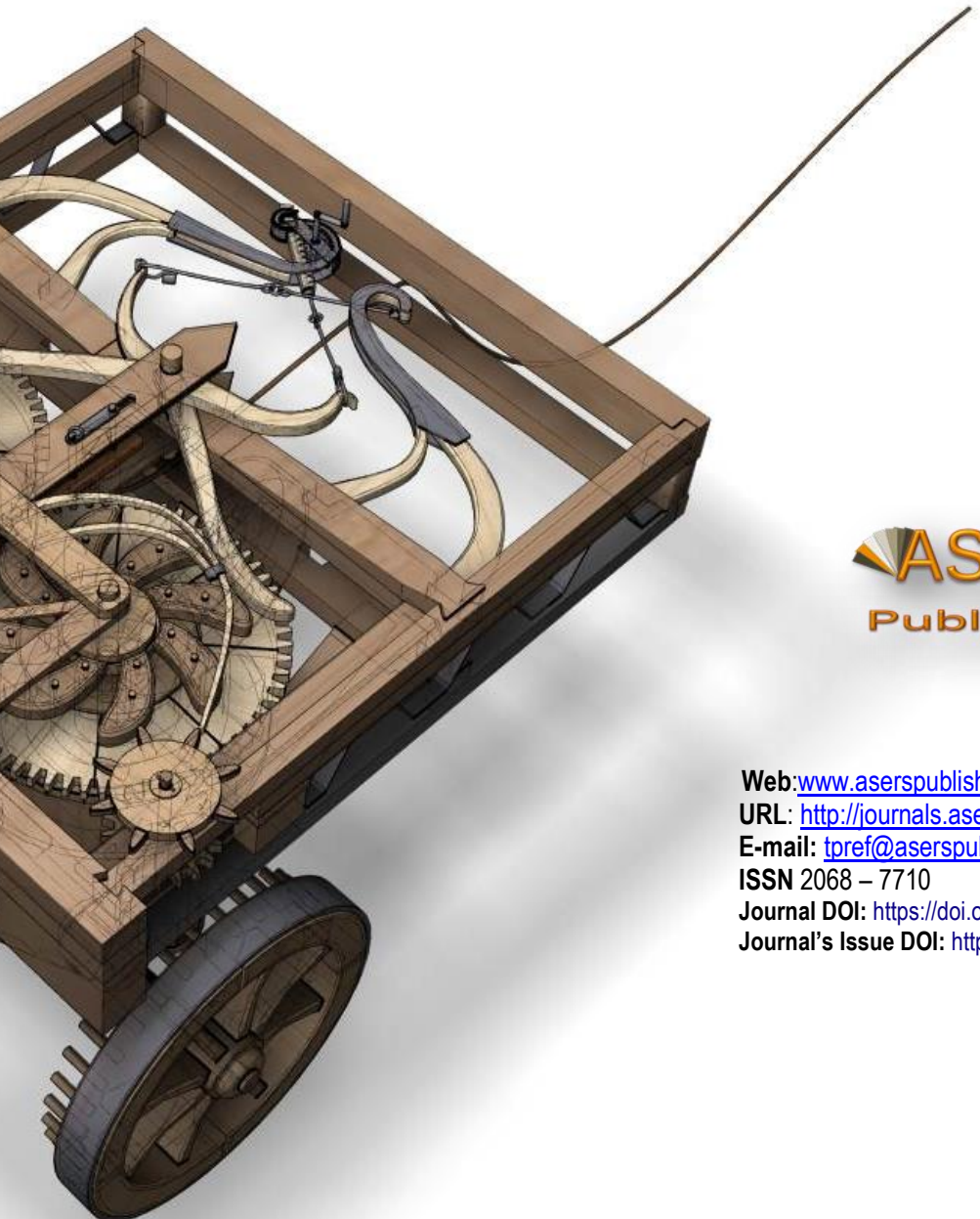

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