

The Contribution Of Income Earned By Women Who Process Nutmeg Juice To Increasing Household Income (A Case Study of the Tomasiwa Cooperative in Leihitu Subdistrict, Central Maluku Regency)

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Abstract

The women of Morella chose to work making nutmeg juice at the Tomasiwa Agricultural Cooperative because it gave them the opportunity to improve their skills, earn a better supplementary income, and access a wider market. The cooperative provides a space for women to participate in decision-making, strengthen group solidarity, and enhance household economic independence. The study aimed to (1) identify the motivations of women working at the Tomasiwa Agricultural Cooperative (KUD) and (2) determine the extent of women's income contribution to their households. The study was conducted in Morella Village, Leihitu Subdistrict, Central Maluku Regency, from February to April 2026, using a quantitative descriptive research method and a census technique to survey 6 business operators at the cooperative. Data were collected through observation, interviews, questionnaires, and documentation, and then analyzed using descriptive quantitative methods. The results of the study indicate that the motivation to participate in the nutmeg juice management business at the Tomasiwa Cooperative stems from the limited and uncertain income of their husbands, the majority of whom work in the seasonal agricultural sector or as casual laborers. 66.67% of the women joined the nutmeg juice management cooperative to meet their daily living needs, while 66.67% did so to ensure the continuity of their children's education, 50% contribute to covering the family's financial needs, and 100% of women agree that

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the activities they engage in help balance their domestic and public roles. Furthermore, their contributions account for 55.45% of the family's total income.

Keywords: Jus Pala, Negeri Morella, Kud Tomasiwa

INTRODUCTION

The agricultural sector is the mainstay of Indonesia's economy and the primary source of livelihood for the majority of the rural population. Agricultural activities encompass not only cultivation but also community participation in the processing and marketing of the commodities produced. Although the agricultural sector's contribution to the national GDP fluctuates in line with developments in the industrial and service sectors, agriculture continues to employ the majority of the workforce and serves as a pillar of household economic resilience in rural areas. According to the Ministry of Agriculture (2020), approximately 28% of the national workforce is still employed in the agricultural sector, underscoring the vital role this sector plays in the national economic structure. This situation positions the strengthening of village-based agroindustry as a strategic step to increase community income, reduce dependence on raw commodities, and strengthen household economic resilience. In line with this, Nurdiani (2021) emphasizes that the development of small-scale and household-based agroindustry can create significant added value through the optimization of local commodity processing into higher-value products.

When agricultural commodities are processed into value-added products, communities gain opportunities for more stable income and greater resilience against fluctuations in primary commodity prices. This is crucial because reliance on the sale of raw materials often places farmers in a vulnerable economic position. A study by Putri and Prasetyo (2020) shows that microenterprises engaged in agricultural processing can increase household income by 30–45%, primarily through the creation of value-added products, the expansion of marketing networks, and the enhancement of local product competitiveness. Consequently, many regions have adopted agricultural processing models as economic development strategies rooted in local potential, as these have proven effective in strengthening community economic self-reliance and creating new jobs, particularly for women and young people in rural areas.

The Province of Maluku is one of Indonesia's premier nutmeg-producing regions, renowned since the era of the global spice trade. Nutmeg is not only of historical and cultural significance to the people of Maluku but also holds very promising economic prospects. In addition to being used as a spice, nutmeg can be processed into a variety of high-value derivative products



such as essential oils, nutmeg syrup, and nutmeg juice—which is now in high demand as a regional specialty beverage. The trend in demand for nutmeg-based products Derivatives with high economic value, such as essential oils, nutmeg syrup, and nutmeg juice—which is now in high demand as a regional specialty beverage. The growing trend in demand for natural and locally sourced products further strengthens these opportunities. Research by Lestari et al. (2021) indicates that processed nutmeg products have strong market potential due to their bioactive compounds that offer health benefits, leading to a steady increase in consumer interest each year. With direct access to nutmeg, rural communities in Maluku have a significant opportunity to develop nutmeg-based food processing businesses as a new, competitive source of income.

In harnessing this vast potential, women play a crucial role, particularly in agricultural processing activities, including the processing of nutmeg-based products. Rural women are not limited to domestic roles but are also active as productive economic actors directly involved in the production, processing, and marketing of processed goods. Wardani (2020) explains that women micro-entrepreneurs demonstrate a high capacity to adapt to economic changes and make a significant contribution to increasing family income. They often serve as the driving force in the home-based food industry due to their diligence, creativity, and ability to manage small-scale businesses. Safitri and Mardiyaningsih (2021) also emphasize that women's participation Women's involvement in food processing businesses can enhance household economic stability, especially when the family's primary income is insufficient. Thus, women's participation in the nutmeg juice processing business not only adds value to the product but also serves as a tangible contribution to improving family well-being, strengthening the village economy, and supporting development based on local potential. Women's involvement in nutmeg juice processing activities reflects a transformation of their roles from the domestic sphere to the productive economic sphere. This aligns with the concept of Women's Empowerment (Kabeer, 1999), which emphasizes that women gain power when they have access to resources, decision-making capacity, and opportunities to participate in economic activities. However, women's contributions to nutmeg juice processing are often not formally recorded and receive insufficient recognition, as explained in Feminist Economic Theory (Sen, 1990) regarding the concept of "cooperative conflicts" within the household. Sen explains that recognition of an individual's economic contributions is heavily influenced by social perceptions of the type of work performed.

When women devote their time and energy to the nutmeg juice production process—from sorting the fruit and peeling it to processing it in the domestic sphere—these activities are often reduced to mere extensions of ordinary household chores that have no market value. In contrast,



men's roles in distribution and final sales are more highly valued because they generate direct cash income. Consequently, this perceptual bias obscures the real economic value of women's work, rendering it "invisible labor," which ultimately weakens their bargaining power and access to formal recognition. As a corrective measure, gender-sensitive policy interventions are needed in the form of legal recognition of women's business groups and equitable market access, so that their domestic-productive work is no longer merely a means of survival but rather a pillar of well-being that is economically valued. Furthermore, the magnitude of the economic contribution from these activities has not yet been clearly measured, so its implications for household income have not been scientifically identified. The selection of the Morella State Cooperative as the research site was based on the presence of an organized group of women who are active in the production and marketing of nutmeg juice. The Tomasiwaa Cooperative serves as a strategic platform for women to engage in economic activities because it provides a clear institutional structure, managerial support, and access to production resources. This aligns with North's (1990) perspective, which emphasizes that institutions—including cooperatives—play a crucial role in enhancing the effectiveness of community economic activities through rules, coordination, and mechanisms that strengthen cooperation. Women in Morella choose to work at the nutmeg juice cooperative because it offers them opportunities to improve their skills, access broader markets, and earn a more stable additional income compared to working individually. Furthermore, the cooperative provides a space for women to participate in decision-making processes, strengthen group solidarity, and enhance household economic independence. Thus, the existence of the cooperative not only strengthens nutmeg-based economic activities but also serves as a means of women's empowerment at the village level. Given these conditions, this study is important to measure the tangible contribution of women working in the nutmeg juice processing sector to household income.

LITERATURE REVIEW

The Role of Women in the Family

Women play a central role in household dynamics, particularly in managing family finances, distributing income, and regulating household consumption (Mulyanto, 2006). In the domestic sphere, women have different authorities and responsibilities than men as heads of households, tailored to their respective capacities and complementary attributes. Managing household finances involves balancing the couple's limited income with ever-increasing daily expenses, credit obligations, social security contributions, and education expenses (Hardiyansyah,



2011). Although traditional social norms designate men as the primary breadwinners and women as homemakers (Astuti, 2012), socioeconomic transformations have enabled women to enter the workforce to help meet their families' basic needs. Women's motivation to work outside the home is driven by several key factors: (1) financial needs, (2) Social and Relational Needs, and (3) Self-Actualization Needs: Work serves as a means for self-discovery, personal development, utilizing skills, achieving accomplishments, and gaining social recognition (Mudzhar, 2001, as cited in Haupea, 2012)

Women's Roles Outside the Family

Although historically earning a living has been considered the primary responsibility of the male head of the household, women's participation in the public economic sphere has increased significantly in recent decades (Otman, 2015). Driven by the economic crisis and rising cost of living in Indonesia, women are actively engaging in public economic activities to ensure their families' well-being and escape poverty. By entering the public sector, women take on dual roles—balancing domestic responsibilities with economically productive activities. However, working women often face a heavy double burden when domestic responsibilities are not shared equally due to persistent gender stereotypes (Lalopua et al., 2019). Despite these structural burdens, working women demonstrate remarkable resilience, particularly in the informal sector.

Processing Nutmeg as a Regional Signature Product

Nutmeg (*Myristica fragrans*) is a high-value spice and an iconic agricultural product of the Maluku Islands, particularly in coastal communities such as Negeri Morella. In addition to processing raw spices (nutmeg seeds and mace), processing nutmeg fruit into food products such as nutmeg juice, syrup, and jam provides significant added value (Tuhulele, 2020). Processing raw fruit extends the product's shelf life, increases its market value, and creates local entrepreneurial opportunities, particularly for rural women, who dominate household-scale food processing activities. Women actively participate in various stages of processing, from fruit selection, peeling, and boiling to formulation and packaging. The processing of nutmeg-based products can be an important alternative source of income if supported by technical training, business licensing, and appropriate technology (Heatharie & Laisina, 2021). However, small-scale female entrepreneurs in the processing sector still face various operational challenges, such as a lack of understanding of food safety standards, inadequate production facilities, and limited market access; This underscores the need for support from local governments and institutional stakeholders



Household Economics

The theory of household economics states that households operate as a single economic unit that aims to maximize overall utility through the efficient allocation of time, labor, and resources (Becker, 1965). Within the framework of New Home Economics, households act as both consumer and producer units that combine market goods with domestic labor. Women make a significant contribution to this process by devoting their time, skills, and labor to both domestic and market-oriented activities. Furthermore, the Collective Household Model emphasizes that household members negotiate the allocation of resources based on individual preferences (Van Klaveren et al., 2008). Participation in income-generating activities—such as processing nutmeg juice—can increase total household income while strengthening women’s bargaining power within the household and improving the family’s overall well-being (Matteazzi et al., 2017; Been et al., 2020)

Income Contribution

Income contribution measures the proportional share that a specific economic activity contributes to total household income (Halim, 2020). Household income typically comes from various sources, including primary employment, side businesses, home-based industries, agricultural production, and social transfers. Calculating the percentage of a specific microenterprise’s revenue relative to total household income serves as a key indicator of the importance of that enterprise to the family’s livelihood. Household income is the total actual income contributed to meet shared or individual needs. Thus, income contribution can be defined as the monetary contribution that working women make to their households, as measured by the amount of income they earn and the amount of money they contribute to their households (Tuhumena et al., 2018). The higher the production output, the greater the revenue generated—especially when supported by high commodity prices—while the amount of income depends heavily on the amount of revenue and the amount of expenses incurred (Unitly et al., 2024).

Level of Education

The level of education directly influences an individual’s ability to make rational economic decisions (Todaro & Smith, 2020). A higher level of education enhances technical skills, managerial knowledge, and labor productivity, thereby directly impacting business efficiency, innovation capacity, and overall household income. Cooperative Support for Microenterprises and Women Cooperative institutions play a transformative role in addressing the structural barriers faced by



women microentrepreneurs in rural areas. Cooperatives provide various forms of support, including managerial training, the supply of raw materials, integrated marketing channels, and social networks (FAO & ILO, 2020). These institutional interventions increase income levels while building leadership capacity and business resilience among women workers. Recent global empirical evidence confirms that cooperatives facilitate the formalization of women-led informal businesses, bridge productivity gaps, and promote inclusive rural development (FAO, 2023; ILO, 2024; FAO, 2026).

Women's Motivation to Work

Women's decisions to participate in the labor force are driven by both internal and external factors (Mudzhar, 2001, as cited in Haupea, 2012). Internal motivation serves as the primary catalyst driving married women to enter the public economic sphere. Specifically, these individual motivating factors include: 1. To increase household income, 2. To achieve personal financial independence from one's spouse, 3. To overcome boredom with daily household routines and make productive use of free time, 4. To make use of personal skills, interests, and expertise.

RESEARCH METHODOLOGY

Location and Time. Conducted in Morella Village, Leihitu Subdistrict, Central Maluku Regency, from February through April 2026. **Population and Sample.** A census approach was used to survey the entire population of female nutmeg juice processors at the Tomasiwa Cooperative, comprising 6 respondents. **Data Collection.** Field observations, in-depth interviews, document analysis, and structured questionnaires.

Data Analysis. 1) Qualitative Descriptive Analysis to outline the demographic characteristics and work motivations of the respondents, and 2) Quantitative Contribution Analysis to examine the contribution of income to household needs, using percentage calculations.

$$\text{Contribution rate} = a/b \times 100\%$$

Where:

a = Total income of female nutmeg juice workers (Rp/month),

b = Total household income (Rp/month).

HASIL DAN PEMBAHASAN



Respondent Characteristics

- Age: All respondents were in the working-age range (41–60 years), with the 51–60 age group accounting for 67% of the total.
- Education: High school graduates accounted for 67% of the respondents, which supports the rapid adoption of product processing innovations.
- Length of Service: The majority of respondents have been employed for between 6 and 15 years (83%), reflecting their high level of technical skill and experience.
- Husbands' Occupations: Most of the respondents' husbands work as farmers (67%) with unpredictable seasonal incomes, prompting their wives to take on dual roles in supporting the family's economy.

Motivasi Perempuan Bekerja

The motivation for the women of Negeri Morella to work at the nutmeg juice processing unit at KUD Tomasiwa is:

1. Meeting Daily Financial Needs (66.67%): To supplement the husband's limited income and cover household expenses.
2. Funding Children's Education (66.67%): Mothers' commitment to ensuring their children can pursue an education through college.
3. Number of Family Dependents (50%): The number of family members who need financial support.
4. Work Schedule Flexibility (100%): Contribution of Income to Household Income

Table 1. Analysis of the Average Household Income Structure of Respondents

Revenue Components	Average Income (Rp/Month)	Contribution (%)
Husband's Income	750.000	31,80%
Wife's Income (Nutmeg Juice Processor)	1.306.379	55,45%



Revenue Components	Average Income (Rp/Month)	Contribution (%)
Other Income (Child Support/Business)	300.000	12,73%
Total Household Income	2.356.379	100,00%

Based on the data above, women's (wives') contribution to household income averaged 55.45%, with proportions ranging from 29.95% to 89.86%. The fact that women's contribution exceeds half of the total household income demonstrates that their involvement in the nutmeg juice agroindustry has evolved from merely a side job to a primary source of household income. This means that women's role in efforts to increase family income to improve family well-being is crucial and significant, given the substantial contribution their income makes to their households (Munster et al., 2015).

CONCLUSION

Based on the results and discussion, it can be concluded that 1) the primary motivation for women working at the Morella State Cooperative is driven by economic reasons, namely to meet daily household financial needs (66.67%) and to fund their children's education through college (66.67%), supported by the flexible work schedule at the cooperative; 2) the nutmeg juice processing business makes a very significant economic contribution, accounting for an average of 55.45% of total household income, which proves that working women are the main pillar supporting the economic well-being of families in Negeri Morella.

Future Direction

This research is aimed at developing a women-centered nutmeg agroindustry model that is more productive, inclusive, sustainable, and market-oriented. Future research should expand the scope beyond mere income contributions to include an analysis of the nutmeg value chain, business efficiency, profitability, labor productivity, and the distribution of value added among



farmers, processors, cooperatives, and the market. Given that the current study involves six female processors, a comparative study across several nutmeg-producing regions in Maluku is necessary to achieve stronger generalizations. Furthermore, research needs to integrate a gender perspective by measuring improvements in women's capacity, decision-making, bargaining power, and well-being. Thus, future research can develop a women-centered policy model for nutmeg agroindustry development as a strategy for rural economic transformation, strengthening household resilience, and sustainable development of island regions.

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