Utilization of Information and Communication Technology in Accessing Credit for Coffee Farmers: A Case Study of the Farming Community in Kabanjahe District, Karo Regency

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Abstract

Coffee is one of the leading plantation commodities which has a significant contribution to the Indonesian economy. The aim of this research is to find out how information and communication technology is used in accessing credit for coffee farmers in the farming community, Kabanjahe District, Karo Regency. Data collection in this research was carried out using primary and secondary data collection methods. Primary data was obtained through interviews and direct discussions with respondents, namely farmers who used cooperative credit and farmers who did not use People's Business Credit (KUR) in Kabanjahe, Karo Regency. Secondary data was obtained from related agencies, namely BPS and journals. The results of the research show that the farming community in Kabanjahe District, Karo Regency, shows that they know how to access KUR using technology. However, they do not use KUR as their initial capital for coffee farming, because coffee is only an additional crop

INTRODUCTION

Indonesia is an agricultural country where agriculture plays a crucial role in the national economy. This is evident from the large number of people working in the agricultural sector and the significant foreign exchange earnings derived from agriculture. Indonesia ranks as the fourth largest coffee producer globally, following Brazil, Vietnam, and Colombia (ICO, 2019).

Coffee is a leading plantation commodity that contributes significantly to Indonesia's economy by generating foreign exchange, providing income for farmers, supplying raw materials for industries, creating employment opportunities, and fostering regional development. The coffee sector is a vital component of Indonesia's plantation industry, serving as a source of income for coffee farmers, foreign exchange earnings, raw materials for industries, and employment through processing, marketing, and export-import trade (Chandra et al., 2013).

Rural farmers generally have limited knowledge and understanding of the credit borrowing process for small-scale enterprises. However, in recent years, several conventional banks have offered loans tailored to agricultural businesses under agreed terms between the banks and farmers. The availability of such loans has encouraged rural farmers, who mostly own land, to enthusiastically apply for agricultural credit with specific interest rates based on the loan amount. Farmers are also able to understand the loan procedures at conventional banks properly.

According to the Ministry of Agriculture of the Republic of Indonesia (2023), the People's Business Credit (Kredit Usaha Rakyat, KUR) aims to provide guidelines for stakeholders at central and regional levels in distributing KUR in the agricultural sector, increase credit disbursement to farmers, farmer groups, farmer group associations (gapoktan), and other agribusiness actors, support agricultural ministry programs, and assist in poverty alleviation and job creation in griculture.Consequently, many rural farmers have taken agricultural business loans to advance their productivity and enterprises by utilizing the funds optimally. This also serves as a contingency when personal funds are depleted, allowing farmers to manage their operations with credit funds.

KUR is a working capital and investment loan provided to individual debtors, business entities, or productive and feasible business groups, using business partners for smallholder plantations, livestock, and fisheries. The KUR program aims to create employment and alleviate poverty. The government launched the KUR program to empower micro, small, and medium enterprises (MSMEs) by strengthening business capital capacity to accelerate agricultural sector development. KUR helps farmers who lack capital and have limited access to financial institutions by providing easy access to agricultural business capital with low interest rates and simple requirements..

Based on the above description, this study aims to investigate how Information and Communication Technology (ICT) is utilized in accessing credit for coffee farmers in the farming community of Kabanjahe District,

Karo Regency

METHODS

The population of this study comprises all coffee farmers in Kabanjahe, Karo Regency, both those who use People's Business Credit (KUR) and those who do not. Data collection was conducted using primary and secondary methods. Primary data were obtained through interviews and direct discussions with respondents, including farmers who used cooperative credit and those who did not use KUR in Kabanjahe, Karo Regency. Secondary data were collected from related agencies such as the Central Bureau of Statistics (BPS) and academic journals.

Data analysis employed factor analysis (Firdaus, 2011). to identify variables influencing credit uptake. The factors analyzed include capital, land area, coffee plant age, number of family dependents, farmer age, interest rate, service quality, credit disbursement procedures, repayment period, credit collateral, income, family expenses, information sources, distance to credit sources, and types of credit sources.

RESULTS AND DISCUSSION

Results

The results of the data that has been obtained, such as the age of the farmer, gender, latest education, length of time working as a farmer, sources of information on KUR, the impact of KUR on productivity, the use of KUR and attending training on Information and Communication Techniques.

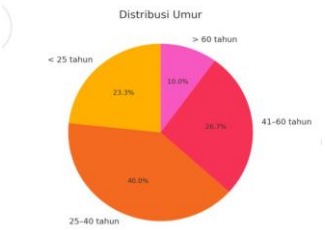

Figure 1. Age graph of farmers

The age distribution of farmers shows that the 25 to 40 years age group dominates, accounting for 40% of respondents. This indicates that most farmers are in their productive years, possessing optimal energy and work capacity. The 41 to 60 years age group comprises 26.7%, representing experienced and mature farmers. Farmers under 25 years old make up 23.3%, reflecting the involvement of younger generations, albeit in smaller numbers compared to the main productive group. Farmers over 60 years old constitute only 10%, indicating low participation from the elderly, possibly due to physical limitations or a shift to managerial roles. Overall, this data highlights the importance of sustaining farmer regeneration to maintain agricultural sector stability in the future.

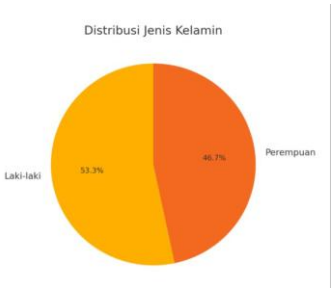

Figure 2. Gender Diagram

The gender distribution reveals a male dominance at 53.3%, with females at 46.7%. This reflects traditional roles where men are more involved in physically demanding fieldwork such as land preparation, planting, and harvesting. Meanwhile, women play significant roles in detailed tasks like seed selection, post-harvest processing, and farm administration. The relatively balanced gender participation underscores the importance of gender inclusivity in agricultural development strategies.

Figure 3. Educational Diagram

Farmers' educational levels vary, influencing their approach to gricultural practices. Sixteen point seven percent (16.7%) have completed elementary school, indicating reliance on practical experience or traditional nowledge. Twenty-six point seven percent (26.7%) have junior high school education, suggesting a better understanding of simple technologies or modern farming practices. The largest group, 30%, completed senior high school, equipping them with knowledge to manage farming enterprises and intermediate agricultural technologies. Another 26.7% have higher education, indicating individuals with analytical skills, broader insights into technological innovations, complex farm management, and market access. This distribution suggests that while formal education among farmers is uneven, the presence of highly educated farmers offers opportunities to enhance productivity and innovation through knowledge transfer and collaboration.

Figure 4. Diagram of Length of Service as a Coffee Farmer

Experience among coffee farmers is evenly distributed across three categories. Thirty percent (30%) have less than five years of experience, representing newcomers or younger farmers still learning and adapting to coffee farming challenges. Another 30% have five to ten years of experience, indicating moderate maturity with sufficient understanding of planting patterns, maintenance, and post-harvest handling, though still open to innovations. The remaining 30% have over ten years of experience, representing seasoned farmers with deep knowledge and proven skills, often serving as information sources and mentors for less experienced farmers. This balance reflects a dynamic coffee farming community combining long-term expertise and youthful enthusiasm, fostering an environment conducive to productivity improvement and technology adoption.

Figure 5: Diagram of sources of information for KUR

Farmers access information about KUR from diverse sources, reflecting varying levels of accessibility and preferences. Social media and agricultural extension services are the primary sources, each accounting for 23.3%. Social media offers rapid and easy access, while extension services provide in-depth explanations. Sixteen point seven percent (16.7%) of farmers obtain information from fellow farmers, highlighting the importance of informal communication within farming communities. Another 16.7% use official bank websites, indicating growing utilization of formal digital channels for reliable and detailed information. However, 20% of farmers report receiving no information about KUR, indicating gaps in information dissemination possibly due to limited technology access, uneven extension programs, or low awareness of KUR's importance. This diversity underscores

the need for a multi-channel approach to effectively reach all farmer segments, ensuring comprehensive KUR information delivery

Figure 6: Diagram of the impact of KUR on productivity

The impact of KUR on farmer productivity is significant but varies in tilization levels. Forty percent (40%) of farmers state that KUR greatly aids productivity by supporting procurement of equipment, superior seeds, and other operational needs directly influencing agricultural output. Thirty percent (30%) find KUR moderately helpful, possibly due to limited loan amounts or challenges in fund management. The remaining 30% do not use KUR, indicating lack of access or choice not to participate. Reasons include insufficient information, stringent requirements, or reluctance to incur debt. Overall, while KUR positively affects many farmers, further efforts are needed to enhance program accessibility and utilization to ensure broader benefits.

Figure 7. KUR Usage Diagram

Seventy percent (70%) of farmers have utilized KUR, but primarily for horticultural crops rather than coffee. This suggests farmers perceive KUR as more relevant for managing horticultural enterprises, likely due to faster harvest cycles and quicker returns compared to coffee, which requires longer maturation. Thirty percent (30%) do not use KUR, citing reasons such as lack of need, administrative hurdles, or insufficient information about KUR benefits for coffee farming. This indicates a utilization gap for coffee crops, highlighting the need for targeted socialization and education to expand KUR's role in supporting coffee farming.

Figure 8: Diagram of Participating in Information and Communication Techniques Training

Only 30% of farmers have participated in training related to Information and Communication Technology (ICT).

This limited access or opportunity to enhance ICT skills may hinder farmers'ability to manage farming operations, marketing, or access up-todate agricultural information effectively. Conversely, 70% have not attended ICT training, indicating a significant gap in training availability, awareness, or infrastructure. Causes may include lack of facilities, low awareness of training benefits, or limited program availability in their areas. This situation calls for increased
government and institutional initiatives to provide widespread and equitable ICT training, supporting the modernization and technology-based transformation of agriculture, ultimately improving productivity and farm management efficiency.

DISCUSSION

This study examines the utilization of Information and Communication Technology (ICT) in accessing People's Business Credit (KUR) by coffee farmers in Kabanjahe District, Karo Regency. Although farmers demonstrate knowledge of accessing KUR through ICT, they tend not to use KUR as initial capital for coffee farming. This phenomenon raises important questions about factors influencing farmers' credit access decisions.

Firstly, coffee's role as a leading commodity in Indonesia's economy is undeniable. As the world's fourth-largest coffee producer, Indonesia holds significant potential to enhance agriculture's contribution to GDP. According to Chandra et al. (2013), coffee contributes not only to farmers' income but also to job creation and regional development. However, findings indicate that farmers in Kabanjahe prefer not to use KUR for coffee farming, viewing coffee as a secondary crop. This reflects a strategic choice favoring horticultural crops that yield quicker and more profitable returns. Research by Ayu and Hotmarida (2020) shows that farmers' credit decisions are strongly influenced by their perception of potential profits from their crops. Therefore, there is an urgent need to improve farmers' understanding of the long-term benefits of investing in coffee farming through KUR, including its positive impact on food security and local economies.

Secondly, factor analysis reveals that capital, land size, and farmers' education levels significantly affect their decision to access KUR. Data show that most farmers have varied educational backgrounds, with a significant portion having only basic education. Muniarty et al. (2022) emphasize that higher education correlates with better farm management understanding and information access. This suggests that despite potential to improve farmers' knowledge and skills, gaps remain in access to adequate information and training. Only 30% of farmers have attended ICT training, highlighting the need for expanded government and institutional efforts to provide broader and equitable training.Enhancing farmers' capacity through relevant education and training can strengthen their ability to utilize KUR optimally.

Thirdly, the sources of information farmers use to access KUR are critical. Social media and agricultural extension services are primary sources, yet 20% of farmers report no access to KUR information. This gap in information dissemination can hinder farmers' credit access. A multi-channel approach is essential to ensure all farmers, especially those in remote areas, receive necessary information. More effective use of digital platforms and intensified extension services can raise awareness and understanding of KUR (Febrianty, 2023). Herdian et al. (2020) found that effective communication between farmers and extension agents enhances technology adoption and improved farming practices.

Fourthly, the impact of KUR on productivity shows that while 40% of farmers find it very helpful, 30% do not use KUR. Challenges include lack of understanding and acceptance of the program.Barriers such as insufficient information, difficult requirements,and reluctance to incur debt impede participation. Dharmawan and Karyani (2018) highlight that negative perceptions of debt can deter farmers from utilizing credit. Therefore, intensified socialization and education on KUR benefits for coffee farming are necessary. Further research is needed to explore farmers'perceptions of KUR risks and benefits and to identify effective strategies to increase participation.

CONCLUSION

This study reveals that the utilization of Information and Communication Technology (ICT) in accessing People's Business Credit (KUR) by coffee farmers in Kabanjahe District, Karo Regency, faces several challenges. Although farmers possess knowledge of how to access KUR, they tend not to use the program as initial capital for coffee farming, which is considered a secondary crop. Factors influencing farmers' credit access decisions include their perception of crop profitability, with a preference for horticultural crops offering quicker returns; education level and information access, where most farmers have basic education limiting their understanding of farm management; and information sources, where despite social media and extension services being primary channels, a significant portion of farmers remain uninformed about KUR. Additionally, while some farmers benefit from KUR, many do not utilize it due to barriers such as lack of information, complex requirements, and debt aversion. Addressing these issues through enhanced education, training, multi-channel information dissemination, and targeted socialization is essential to improve KUR utilization and support the development of coffee farming in the region.

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