THE ROLE OF INTERNET ACCESS FOR BUSINESS OWNERS IN ACCESSING KREDIT USAHA RAKYAT (KUR) IN SEMARANG CITY

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ABSTRACT

This research aims to analyze how internet access affects business owners' decisions to access KUR in Semarang City. The methodology used in this study is quantitative, employing logistic regression analysis with marginal effects, utilizing secondary data from the National Economic and Social Survey (SUSENAS) of Semarang City conducted in 2021. The results reveal a robust positive and statistically significant relationship between internet access and business owners' decisions to access KUR. The availability of the internet equips individuals with valuable resources, information, and a seamless application process, all of which contribute to a heightened inclination towards KUR utilization. Additionally, other variables that demonstrate significant influence include gender, household size, and homeownership status.

Keywords: Kredit Usaha Rakyat (KUR), Internet, Socio-Economic Determinants, and Logistic Regression.

INTRODUCTION

Indonesia is experiencing rapid economic growth, with Micro, Small, and Medium Enterprises (MSMEs) playing a vital role in this progress. Contributing 60.5% to Gross Domestic Product (GDP) and 96.92% to labor absorption, MSMEs are a crucial pillar of the national economy (Ministry of Economic Coordinator, 2022). However, these enterprises face several challenges, such as limited access to financing, technology, and market expansion. Sukarmi, et al., (2021) revealed that the problems that are obstacles for MSMEs include, limited access and expansion of market share, poor access to capital, limited access to information and technology, weaknesses in organization and management, and lack of enterprise networks and partnerships. These conditions must be improved immediately, especially in terms of financing, so that MSMEs can grow and contribute more to the economy (Audina, et al., 2017).

According to Tambunan, Enuh, Ubaidullah, & Tamba (2022), MSMEs struggle to access capital due to limited resources and the inability to meet traditional loan requirements. Government initiatives like credit guarantees often go unused. To help MSMEs grow, it's crucial to develop loan models tailored to their needs and prioritize business continuity when assessing creditworthiness.

Figure 1. Percentage of the Capital Sources for Small and Medium Industries
in Central Java From 2018 – 2020
Source: Central Statistics Agency Central Java (2021)

Figure 1, illustrates that MSMEs still rely on owner's equity as the primary source of capital for their business operations. According to Dzikrina (2023), many MSMEs continue to face challenges in accessing capital to sustain their businesses. The constraints on sources of financing from formal financial institutions have led MSME owners to rely on informal sources of funding (Husaeni & Dewi, 2019).

The government has implemented policy packages to sustain growth by encouraging consumption and capital formation, including initiatives to strengthen MSME financing through the distribution of KUR as an MSME solution in accessing financing from formal financial institutions, and other measures aimed at boosting domestic demand (Ministry of Economic Coordinator, 2023). KUR is a key component of these efforts, providing accessible financing to MSMEs that lack collateral. Central Java is leading in KUR disbursement, reflecting its importance in supporting economic growth and job creation.

Table 1. Development of Access to MSMEs KUR Semarang City in 2019-2021

Year	Debitor	Accredited Value	Outstanding
2019	21.371	695.195.395.549	165.104.350.092
2020	31.861	1.070.732.933.645	488.180.325.161
2021	37.328	1.702.978.989.436	1.343.912.226.850

Source: SME Cooperative Office of Central Java Province (2021).

Based on Table 1, access to KUR in Semarang City increased from 2019 to 2021, with the number of debtors and the outstanding value of loans rising significantly. However, compared to other districts/cities, Semarang City's access to KUR remains relatively low. According to Survei Sosial Ekonomi Nasional (2021), the Sragen Regency in Central Java has the highest rate of MSMEs accessing KUR compared to other forms of credit. However, Semarang City presents a different picture, with a higher percentage of MSMEs accessing non-KUR credit than KUR. This indicates a need for further investigation into the factors hindering KUR access in Semarang City to develop strategies for improvement.

The Indonesian government has made significant efforts to increase KUR accessibility through digital platforms. Online applications and information dissemination have improved access (Ministry of Coordination of Economic Affairs

of the Republic of Indonesia, 2023). However, despite government initiatives and the growing digital presence of MSMEs, there is still a significant gap in digital adoption among these businesses. Many challenges remain in transitioning MSMEs to the digital age.

Charitonenko & Afwan (2003) noted that Indonesia's Microfinance Development Movement has been key in shaping new laws and promoting best practices for sustainable poverty reduction and economic growth. However, MSMEs also face challenges in adopting digital technology. To stay competitive, MSMEs must integrate digitalization into their operations, improving efficiency, and productivity, and expanding their market reach. With over 210 million Internet users in Indonesia (APJII, 2022), digitalization helps MSMEs overcome location limitations, streamlining business processes and improving performance (Mosavi & Triansyah, 2023; Skare et al., 2023; Radicic & Petkovic, 2023). Technology adoption is essential for business success in the digital era, as the internet enhances information sharing and operational improvements.

According to Central Statistics Agency Central Java (2021), Internet usage in Semarang is relatively low at 5.01% compared to other Central Java regions like Boyolali (12.14%) and Jepara (10.43%). MSME operators in Semarang use the internet to access information crucial for business development, including obtaining microcredit loans (KUR) for expansion. The research uses the economic development theory framework, emphasizing the value chain and how MSMEs can grow through credit provided by formal financial institutions like banks.

Janvry and Sadoulet (2016) highlight that MSMEs can grow with the support of credit, which banks offer through advanced payments. This financing helps local businesses expand by increasing production capacity and is repaid through reduced prices or output. Internet access influences MSME owners' willingness to pursue microfinance loans like KUR, and formal financial institutions may facilitate easier access to KUR information. The Semarang City Government has also supported digitalization efforts by creating a portal to help MSMEs leverage digital technology to grow their businesses (Semarang City Government, 2023). Previous studies show mixed results regarding the relationship between internet access and microcredit, with both positive and negative impacts noted (Guganeshan & Perampalam, 2017; Hishiguren, 2006; Bayar et al., 2021).

The main objective of this research is to comprehensively explore the subject denoted as "The Role of Internet Access of Business Owner's Decision to Access Kredit Usaha Rakyat (KUR) In Semarang City" This research aims to bridge this gap by conducting a detailed exploration of the unique socio-economic determinants that drive or constrain individuals from accessing KUR in Semarang city.

The rest of the paper is structured as follows: Section 2 reviews the conceptual framework and the hypotheses development. Section 3 outlines the methodological framework and data used. Section 4 presents and interprets the main results. The final section provides the conclusion.

LITERATURE REVIEW

According to Mankiw (2018), illustrates the relationship between inputs (factors of production) and outputs (goods or services) through the production function. Mankiw emphasizes that production is not merely the sum of inputs, but rather a complex

process influenced by various factors, including efficiency, technology, and the organization of production. Production theory is a theory that studies how an entrepreneur combines various types of input at a certain level of technology to produce a certain output as efficiently as possible so the objective of production theory is to determine the efficient rate of production with existing resources (Sudarman, 2004). Meanwhile, production is a process of input into output so that its value increases (Adiningsih, 1999).

The relationship between the combination of inputs in a production process that generates output can be represented by the production function. The production function describes the quantity of output that can be produced from each specific combination of inputs (Pindyck & Rubinfeld, 2015).

The production equation is

$$q = f(K, L) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (1)$$

This equation illustrates (q) as the quantity of output produced, (f) as the production function, and the relationship between the amount of output derived from capital (K) and labor (L). This aligns with the notion that credit, as a form of financial capital, plays a crucial role in enhancing production. The connection between production theory and credit lies in its function as a source of capital for business owners, as well as its contribution to increased productivity and production efficiency.

The production function determines the maximum output achievable with given inputs. Adequate financing, often accessed through credit, can significantly enhance this production process. By increasing the availability of capital, businesses can boost output quality and quantity. Essentially, the credit acts as a catalyst for improved production efficiency.

Development economics focuses on addressing economic challenges in developing countries, encompassing issues like poverty, inequality, and sustainability (Janvry & Sadoulet, 2016). The key to development is adequate funding, which can unlock economic potential in marginalized communities (Drèze & Sen, 2013).

Microfinance, particularly credit, is a cornerstone of development economics. It addresses income fluctuations and consumption needs. KUR, a specific microfinance product, is designed to support MSMEs by providing financial access and mitigating risks (Sengupta & Aubuchon, 2008; Prahalad, 2006).

While KUR offers opportunities, MSMEs often face challenges. They need savings to manage debt, handle unexpected expenses, and invest in business growth (Janvry & Sadoulet, 2016). Additionally, the availability of KUR information through formal banking channels can influence its uptake (Janvry & Sadoulet, 2016).

Based on Figure 2, Low-income individuals face challenges in saving due to factors like safety, convenience, and temptation. Informal savings clubs lack security, while formal institutions often have barriers. Interestingly, borrowing can serve as a saving mechanism. Streamlining options and implementing default choices can encourage saving.

Microfinance institutions, including KUR, have been instrumental in improving financial access for the poor (Janvry & Sadoulet, 2016). However, successful use of KUR depends on various factors, including business acumen, entrepreneurial spirit, and market conditions. While KUR can be a valuable tool, it's not a panacea for poverty eradication.
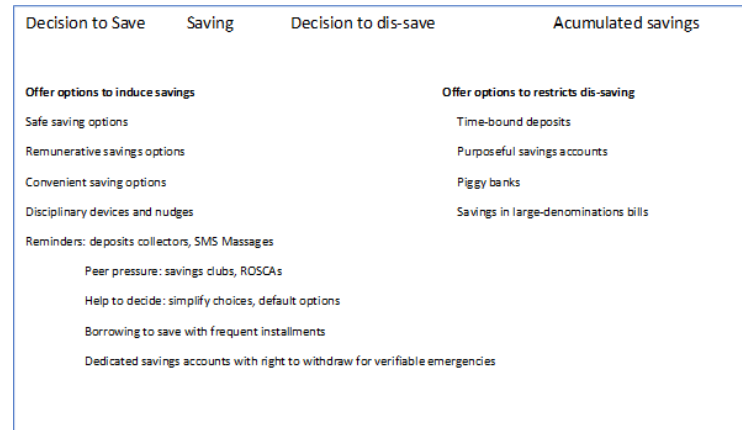
Figure 2. Helping the Poor Accumulate Savings of Development Economics
Source: Janvry & Sadoulet (2016)

To enhance financial inclusion, further institutional innovations are required, encompassing expanded product offerings, broader coverage, improved quality, and tailored services to meet diverse needs and capabilities

Research by Natalia & Putranto (2022), Hishigsuren (2006), Zhongkai & Hassan (2019), and Pellegrina et al. (2017) demonstrates a positive correlation between internet access and microfinance for MSMEs. Archer et al. (2020) found that while firms often rely on informal credit, older and more educated individuals tend to use formal credit less and require smaller loans. Demographic factors also influence credit access. Wongpit & Sisengnam (2022) found a negative correlation between household size and credit access in Laos, while Chaudhuri et al. (2018) and Ghosh (2023) highlighted gender disparities in credit access, with women-owned firms facing challenges compared to their male counterparts.

The internet has become an essential tool for MSMEs, providing access to crucial information, including details about the KUR (microloan program). MSMEs believe that KUR can enhance business performance and growth, and the internet's role in facilitating access to KUR information is expected to influence their decision-making process. Credit plays a vital role in development economics, particularly for MSMEs with irregular income. The KUR program, designed to address market failures affecting MSMEs, is a central focus of this research. By providing a source of capital, KUR can contribute to business growth and satisfaction. The internet further enhances the decision-making process for MSMEs seeking KUR, as it provides access to information and facilitates the evaluation of financing options. Microfinance institutions, including those offering KUR, play a crucial role in empowering low-income communities (Sengupta & Aubuchon, 2008). KUR provides MSMEs with a financial safety net and enables them to invest in business growth. This research aims to investigate the relationship between internet access and business owners' decisions to utilize KUR in Semarang City.

Based on the theoretical framework that has been formulated (see Figure 3), the hypothesis of this study is as follows:

- H0: The Internet does not affect the probability of accessing KUR
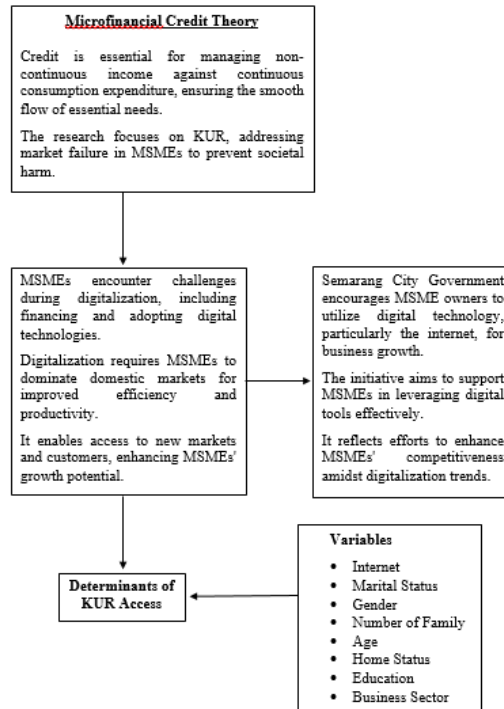- H1: Internet affects the probability of accessing KUR

Figure 3. Conceptual Framework

RESEARCH METHODOLOGY

Data

This research utilizes secondary data from the National Social Economic Survey (SUSENAS) conducted by the Central Statistical Agency (BPS) of Indonesia. The data focuses on individuals owning micro-enterprises and accessing KUR loans in Semarang City. The study population encompasses all inhabitants of Semarang City, while the sample is specifically individuals meeting the criteria and participating in the 2021 SUSENAS. The data collection method employed by SUSENAS is a cross-sectional observation using a two-stage one-phase stratified sampling technique. Table 2 provides basic statistics of the sample data.

Method

In this research, logistic regression was used as the primary analytical method, following data collection from the Central Statistics Agency in Semarang City. Logistic regression predicts the probability of an outcome based on dichotomous dependent variables and does not require normally distributed data. The equation's functional model can be described as follows:

$P = f(I, MS, G, NF, A, HO, E)$…………………………………………..………… (2)

Table 2. Descriptive Statistic

Variable	Total	Percentage (%)
KUR (dummy)		
• Accessed	56	5.47
• Not Accessed	968	94.53
Internet (dummy)		
• Used	225	22.03
• Not used	799	77.97
Marital Status (dummy)		
• Married	522	51.03
• Not Married	502	48.97
Gender (dummy)		
• Men	518	50.55
• Women	506	49.45
Number of Family Member (People)		
• Single	32	3.10
• 2-5 People	846	82.67
• 6-10 People	146	14.23
Mean number of family	4.052209	-
Number of family minimum	1	-
Number of family maximun	10	-
Age (Years Old)		
• 0-20 years old	330	32.24
• 21-50 years old	465	45.35
• 51-80 years old	223	21.77
• 81-97 years old	6	0.63
Mean Age	33.45209	-
Age minimum	0	-
Age maximun	97	-
Home Ownership Status (dummy)		
• Owned	734	71.68
• Not owned	290	28.32
Education (Level)		
• Not Attending	116	11.30
• Elementary School	220	21.54
• Secondary School	152	14.86
• High School	372	36.29
• Higher Education	164	16.01
Mean Education	4.032538	-
Education minimum	1	-
Education maximun	5	-
Business Sector (dummy)		
• Non agriculture	498	48.68
• Agriculture	526	51.32

Source: Susenas (2021) processed

A logistic regression aims to predict the probability of an outcome based on individual characteristics. As probability is expressed as a ratio, what the model actually represents is the logarithm of the probability, formulated as:

$$In\ p/(1-p) = \beta0 + \beta I Ii + \beta2MSi + \beta3Gi + \beta4NFi + \beta5Ai + \beta6HOi + \beta7Ei + \varepsilon \ ....\ (3)$$

Description:

p	: Business Owner's decision to take KUR (Dummy variable)
β_0	: intercept
$\beta_1, \beta_2, \beta_3$	: Regression coefficient
I	: Internet (Dummy Variable)
MS	: Marital status (Dummy Variable)
G	: Gender (Dummy Variable)
NF	: Number of Family (Ordinal Variable)
A	: Age (Ordinal Variable)
HO	: Home ownership status (Dummy Variable)
E	: Education (Ordinal Variable)
B	: Business sector (Dummy Variable)
ε	: error

The analysis was executed using Stata software and focused on business owners' decisions to access KUR loans, considering variables such as internet use, marital status, gender, family size, age, homeownership, education, and business sector. In the context of binary variables, the shift is from 0 to 1, reflecting a single 'unit' as typically conceived, which is formulated as:

$$Y = Pr(KUR) \ (Control \ Variables) \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(4)$$

Description:

KUR	: Business Owner's decision to access KUR
Control Variables	: Internet (Independent Variable), Marital Status, Gender, Number of Family, Age, Home Status, Education (Control Variables)

According to Stata (2024), MFX is a command in Stata used to calculate marginal effects after various estimation commands, including logistic regression. Marginal effects provide the change in the predicted outcome for a one-unit change in an independent variable, holding all other variables constant. This is particularly useful for understanding the impact of each independent variable on the predicted outcome.

RESULTS AND DISCUSSION

Results

This research employs logistic regression to examine the relationships among various data factors and to predict the value of one factor based on others. The study's primary focus is to investigate the influence of internet access on Business Owner's decisions to apply for KUR in the city of Semarang, while also considering other influencing factors.

According to Table 2, this study analyzed the impact of various factors on business owners' decisions to access KUR loans using marginal effects. Internet access positively influenced the decision to access KUR, with a 2.53% increase in probability for each additional internet user. Marital status and the business sector showed no significant impact on the decision. Gender positively influenced the decision, with males having a 4.54% higher probability of accessing KUR compared to females. The number of family members positively influenced the decision, with a 0.85% increase

in probability for each additional family member. Age and home ownership negatively influenced the decision, though the effects were not statistically significant. Education level also negatively influenced the decision, with a 0.35% decrease in probability for each additional year of education.

Table 3. Marginal Effect Analysis Results

Variable	dy/dx	Standard Error	P > |z|
Internet	0.0253	0.0136	0.063
Marital Status	0.0061	0.0136	0.651
Gender	0.0454	0.0139	0.001
Number of Families	0.0085	0.0037	0.023
Age	-3.3300	0.0005	0.995
Home Ownership	-0.0141	0.0084	0.095
Education	-0.0035	0.0020	0.080
Business Sector	0.0002	0.0008	0.809

Discussion

Internet access significantly positively impacts business owners' decisions to access KUR loans. Increased internet usage correlates with a higher likelihood of accessing KUR. This aligns with findings from Natalia & Putranto (2022) and supports the notion of digitalization as a key enabler for MSMEs to access financial services. The internet's role in bridging information gaps and facilitating economic activities further strengthens its impact on KUR access.

The findings of this research confirm that male MSME entrepreneurs is more likely to obtain KUR credit than females, from the result, males are more likely to access KUR compared to females this value indicates that males have a higher probability of accessing KUR by 4.54% compared to females. In other words, gender is capable of being a predictor for KUR access. Aligning with previous research Beyhaghi et al., (2020) found that women are more susceptible to credit constraints. Mijid and Bernask (2013) also found that women experience higher rates of loan rejection than men. Chaudhuri et al., (2018), stated that gender and access to credit held by women faced weaknesses in the financial market for small and subjected to discrimination. Furthermore, Ghosh (2023) stated that gender has a significant effect on access to credit. Quartey et al. (2017) also found that access to credit was heavily filled by gender, with women often facing constraints.

The study finds a positive correlation between the number of family members and access to KUR loans, suggesting that higher financial burdens drive MSME owners to seek credit. As family size increases, household expenses rise, limiting income and leading to increased credit use for essential needs like housing and food. According to Sugianto (2022), the number of dependents significantly affects spending and loan repayment rates. Previous research by Winkle & Monden (2022) and Scholz & Seshadri (2007) confirms that larger families reduce wealth due to increased expenses, leaving less room for savings. Similarly, Ahmad et al. (2019) highlight family size as a predictor of credit access.

Homeownership has a negative impact on the Business Owner's decision to access KUR. This value indicates that the probability of Business owners deciding to access KUR decreases by 1.41% when they own a home. More established companies, households, and those with older owners and more trained individuals tend to be less

dependent on credit and have smaller loan requirements. The findings of this study are in line with research findings by Archer, et al., (2020) which state that home ownership cannot be a predictor of credit positively. The study by Karlan, Morduch, and Mullainathan (2010) states that individuals who fit one of the criteria aspects of the World Bank's Living Standards Measurement Surveys (LSMS), such as homeownership to access microfinance, tend to decline because they do not wish to take on debt, and also because they cannot find suitable loan products.

The study found that higher education negatively impacts business owners' decisions to access KUR loans. The average education level of MSME owners in the study was high school. The findings suggest that better-educated business owners, who may have a greater understanding of credit risk, are less likely to pursue KUR loans.

This aligns with research by Bashir & Danlami (2022) and Archer et al. (2020), which also indicated that education negatively affects access to credit. The research suggests that higher education increases the ability to assess risk, leading some business owners to reject loans. Additionally, many MSMEs lack bank accounts, which makes loan applications impractical, prompting educated owners to seek microfinance options instead. Educated business owners are considered more bankable and thus may apply directly to banks for loans.

CONCLUSION

This research aimed to determine the impact of internet access on business owners' decisions to access KUR loans in Semarang City. Using logistic regression analysis on SUSENAS data, the study found that internet usage significantly influenced the decision to access KUR, highlighting the importance of digitalization in facilitating access to financial services.

Gender emerged as a crucial factor, with men demonstrating a higher likelihood of accessing KUR compared to women. Family size positively impacted KUR access, potentially due to increased financial burdens. Conversely, homeownership and education levels negatively influenced the decision to access KUR. Marital status, age, and business sector did not significantly impact KUR access.

In the scope of this research, certain limitations need to be acknowledged, including the lack of information regarding the extent to which relevant parties distribute KUR information through the Internet and lack the inclusion of indicator variables that influence the decision to participate in the KUR program (income level, business size, loan history, financial literacy, and others).

The research findings suggest several recommendations to increase public awareness about KUR accessibility, benefits, and interest rates is crucial to encourage wider adoption, and future studies should incorporate additional independent variables to gain a more comprehensive understanding of factors influencing KUR access.

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