Socio-Economic Impact of Financing Facility on Low-income Communities and Developers in Indonesia

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Abstract
Housing financing is one of the essential solutions to make it easier for people to access the need for livable houses. One of the subsidy schemes from the government is the Housing Financing Liquidity Facility (FLPP) by BLU PPDPP. This study focuses on the socio-economic impact of FLPP at the micro level for low-income communities (MBR) and developers. Two econometric approaches are used to analyze: one-way t-tests and linear regression analyses. The analysis results show the impact of FLPP on the micro level for MBR and developers provides a better improvement in welfare. The developer company that distributes FLPP has an increase in welfare from various aspects such as demand for housing units, company image, and company assets. For MBR, there are improvements in terms of income, education, health, work, and other supporting infrastructure.

Keywords:
developers; low-income communities; housing financing liquidity facility; sosio-economics

How to Cite:
INTRODUCTION

Everyone desires a decent house, but often there are still many people who are constrained due to accessibility issues. For most people, poverty is the main obstacle for a person or household to access a decent house. BPS data shows that households with access to adequate and affordable housing only reached 56.5% in 2019 and increased slightly to 59.5% in 2020. The inability of households, especially the poor to access decent housing, can have a wide spectrum of impacts. These impacts not only affect their productivity as individuals and as workers, but also have the potential to keep the poor in the vicious circle of poverty. This condition can also prevent the multiplier effect of the construction of livable houses and other supporting facilities from rolling out in the economic and social fields.

Housing finance support is a crucial service to support the community in accessing the basic needs for livable housing. According to a survey from Bank Indonesia (2021), housing loan facilities (KPR) are the main source of financing for consumers (75.31%) in purchasing residential properties. The importance of housing finance increases when the demand for housing tends to increase with the increase in population (Thompson, 1937) and the inelastic nature of demand (Malpezzi & Mayo, 1987; Tandoh & Tewari, 2016). But, on the other hand, the limited resources, both income and skills possessed by the community, often limit their ability to own a house.

The current orientation of housing and settlement development needs to focus on the problem of low financing. If low sources of financing are not yet available, people who have the ability to buy a house are not helped, especially people who are included in having low incomes. Delaying the purchase of a house makes people lose the opportunity to be able to buy a house and then from time to time due to inflation, their purchasing power decreases with house prices increasing. Thus, the priority of housing must start from improving the demand side to ensure that low-income people can actually have an effective purchasing power for the provision of houses (Juniarko et al., 2012; Liu & Ong, 2021). Therefore, government intervention in the form of subsidized Home Ownership Credit (KPR) using a housing finance assistance scheme is expected to be able to help people get the houses they need and live a more decent life.

One of the subsidy facility schemes offered by the government is the Housing Financing Liquidity Facility (FLPP) managed by the Public Service Agency (BLU) of the Housing Financing Fund Management Center (PPDPP), the Ministry of Public Works and Public Housing (PUPR). This program was launched by the government because of the low purchasing power of the community and the high rate of yearly inflation. People who receive FLPP assistance only need to pay a fixed interest rate of one digit throughout the loan period (fixed rate). FLPP funds originating from the State Revenue and Expenditure Budget (APBN) have the aim of creating cheaper housing finance, so that it is affordable for Low-Income Communities (MBR). This help is realized by housing finance with lower interest rates/margins when compared to market interest rates (People’s Housing Regulation No. 3 of 2014).
Low-Income Communities (MBR) understand people who have limited purchasing power. Thus, it is necessary to get support from the government to obtain houses as stated in Law no. 1 of 2011 concerning Housing and Settlement Areas. According to the regulation No. 5/Permen/M/2007, MBR are people with income below two million five hundred thousand rupiah per month. By looking at this, it is difficult for people with this income to get a decent house because they are still struggling with their basic needs.

The urgency of increasing the accessibility to livable houses is partly due to its connection with national strategic projects. The government accelerates projects that are considered strategic and have high urgency for realization in a short time in order to increase economic growth through infrastructure development in Indonesia. This aspect is also in line with one of the sustainable development goals in the SDGs related to sustainable cities and settlements, making housing fulfillment crucial. In particular, the SDGs have a target of ensuring access for all to decent, safe, affordable housing, and basic services, as well as managing slum areas. The government is trying to overcome those challenges by ensuring access to safe and affordable housing, and improving slum settlements in urban areas. Therefore, through the housing finance assistance scheme, in particular FLPP, it is hoped that it will be able to support low-income families in obtaining livable houses and at the same time fulfilling one of the SDGs goals.

Several empirical studies in various countries show the socio-economic impact of the housing facility program in the long term, especially for the vulnerable population. These impacts include more stable children’s education, a place to live closer to the workplace, improved health and welfare which have an impact on increasing productivity, connecting low-income communities with better economic opportunities, and encouraging job creation and economic growth (SGS Economics & Planning, 2020; CLPHA, 2018; Johnson & Hurter, 1999; MacDonald et al., 2007). The existence of a housing subsidy facility also provides flexibility for consumers to adjust the allocation of spending and consumption from their income (Laszek, 2013; Van Dijk, 2018; Onyekwelu et al, 2020). The reduced spending allocation for housing finance can be diverted to consumption for other important needs such as health and education.

Other studies mention that the link between housing and the economy and between housing and housing finance finds that the benefits of housing for individuals accrue in large part indirectly through better health, based on improved water and sanitation. Housing also generates large multiplier effects in terms of employment and output (Doling et al, 2013). The relationship between housing market financialization to increased housing (wealth) and social inequalities tend to be inferred from in-depth case studies researching diverse mechanisms in specific (urban) localities. Desmond & Gershenson (2016) and Fields & Uffer (2016) on eviction carrousels by rent-seeking landlords in New York and Berlin, or Hulse & Yates (2017) on the mismatch between demand and supply of (urban) rental housing for different income groups in Australia. The research for Western-Europe has nonetheless established an association between housing market financialization and declined affordability of housing for low-income owners and private renters, mainly arising through increased housing costs (Dewilde & De Decker, 2016; Dewilde, 2018;
& World Economic Forum, 2019). Housing unaffordability may eventually spill over to other domains, such as creating financial stress, indebtedness or involuntary relocation to lower-quality properties or unattractive locations.

Housing finance is one of the factors that contribute in the overall economy growth of the country. The role of housing finance as a tool to boost the housing market is proven, especially during the economic crisis such as global financial crisis, pandemic covid-19, and other crises. The relationship between housing finance and housing market is dependent on each other. Expansion in the housing market means that there are more house buyers require financing. A strong housing finance will definitely give a positive impact to the country’s economy. Furthermore, the impact of housing financing has an impact on society at all levels.

Economic theory predicts that recipients of public housing facilities will have a change in consumption and a response to the supply of labor. From the beneficiary’s perspective, this will translate into changing economic incentives in two ways. First, by influencing the form of budget constraints, namely by obtaining housing facilities which can lead to changes in consumption decisions and labor supply. Second, the acquisition of housing facilities will encourage housing movement, which may bring new benefits and costs such as moving costs, changes in travel costs, changes in access to job opportunities, or social transfers (Van Dijk, 2018). Carozzi et al (2020) said that the UK’s Help to Buy (HtB) as one of the housing lending facilities in UK increase construction numbers without affecting prices near the English/Welsh border, an area with less binding supply constraints and comparably affordable housing. HtB also led to bunching of newly built units below the price threshold, building of smaller new units and an improvement in the financial performance of developers.

According to SMF and ITAPS FEM IPB (2019), the direct economic impact of the interest rate subsidy policy (imposition of FLPP) in the housing sector in Indonesia has the largest impact on increasing production in the real estate services sector and residential building sector compared to other simulations. This result shows that the policy of imposing FLPP has effectively increased public accessibility to the housing sector so that in the end it encourages an increase in production in the real estate service sector and the residential building sector. For the community, changes in welfare are based on 6 aspects, namely physic, environmental comfort, independence, psychology, supporting facilities, and the economy. Respondents from the general public experienced changes in welfare after receiving FLPP funding assistance (KemenPUPR & FEM IPB, 2017).

Furthermore, this study focuses on the socio-economic impact of FLPP at the micro level, not only on low-income communities (MBR) as beneficiaries but also on developers as partners who play a role in providing housing. This condition is because the contribution of the housing sector will have a broad multiplier impact. These socio-economics impacts include aspects of income, education, health, quality of life, as well as other sectors such as employment, services, and related industries which are also affected by the construction of houses with all the activities that occurred before and after it.
In providing housing for society, especially for low-income people that is until now, they are still facing financing problems that make it difficult for them to access livable houses. This problem has implications for the insufficiency of their primary needs. Once their primary need is fulfilled, hence they can focus on fulfilling other aspects to improve their welfare such as health, education, and others. FLPP, as one of MBR’s housing financing facilities, can potentially enhance MBR welfare. Similarly, developers can potentially increase trust and performance due to channeling FLPP in front of the public, especially for new developers. Therefore, housing financing schemes are essential to maintain to help both MBR and developers improve their welfare.

It is observed that though there are many studies worldwide and in Indonesia on how the housing lending facilities with all schemes have a significant impact to increase economics and welfare. Most of previous studies only analyzed socio-economic impacts at the macro level and MBR. In this study, using primary data from all provinces in Indonesia to analyze the impact of housing financing liquidity facilities (FLPP) by BLU PPDPP, not only for MBR but also for developers as well is a novelty in this study. The objective of this study is to analyze the impact of providing FLPP through BLU-PPDPP at the micro level on various socio-economic aspects for both MBR and developers.

METHODS

Analysis of the impact of FLPP at the micro level was carried out using primary data with data collection through surveys. The survey was conducted online through the Google Form platform on two groups of respondents, namely developers and MBR. The scope of the analysis is at the national level and the sampling of respondent selection is determined purposively. Some indicators that serve as reference for determining sampling include (i) FLPP that has been realized, (ii) proportionality of the number of developers in each province, (iii) proportionality of the number of MBR beneficiaries of the FLPP program between provinces, and (iv) representation of the western and eastern regions of Indonesia.

Data collection was carried out from June to September 2021. The number of developer respondents was 179 and 540 MBR respondents filled in. The distribution of the location of developer respondents who received FLPP was mostly in West Java Province (23 developers), followed by West Kalimantan (19 developers), Central Java (18 developers), South Sumatra (13 developers), and West Papua (12 developers). Meanwhile, MBR respondents came from all Indonesian regions, with representatives from each province. The 5 provinces with the most respondents are West Java (82 people), South Sumatra (61 people), South Kalimantan (49 people), East Java (37 people), and West Kalimantan (31 people).

Econometric models are used to analyze the socio-economic impact of FLPP assistance from BLU-PPDPP. Observations were made at the micro level, namely on developers and MBR who benefited from FLPP. Two econometric approaches were used to analyze the socio-economic impact, namely (1) one-tailed test on developer and MBR
respondent data, and (2) linear regression analysis on MBR respondent data to complete
the results of the first analysis.

**One-way test**

The one-way test is used to answer the question of whether or not there is a change
in welfare improvement after getting the FLPP, based on the perceptions of developer
and MBR respondents. The questions asked were as many as socio-economic indicators
that were observed, including absorption of field workers, absorption of professional
workers, highly educated workers, total company assets, number of housing units sold,
and company image for developer respondents. Developer respondents chose answers
based on a Likert scale of 1-5 with the following explanation:
1 = significant decrease
2 = decrease
3 = similar
4 = increase
5 = significant increase

Furthermore, the hypothesis of the one-way test for developer respondents is:

\[ H_0: \mu \leq 3 \] (no impact/change for developers)
\[ H_1: \mu > 3 \] (there is an impact/change to the developer)

As for MBR respondents, the socio-economic indicators used are related to
education, health, employment, and income, as well as quality of life which is observed
from the access to electricity, clean water, and internet network infrastructure. Respondents
chose answers based on a Likert scale of 1-5 with the following explanation:
1 = Bad
2 = Worse
3 = Similar
4 = Better
5 = Much better

Meanwhile, the hypothesis of the one-way test for MBR is:

\[ H_0: \mu \leq 3 \] (no improvement in welfare)
\[ H_1: \mu > 3 \] (improvement in welfare)

The limitation of using the one-way test is that it only obtains perceptual information
from respondents regarding changes/improvements in welfare, but cannot measure the
quantity of the observed indicators. Therefore, on the data of MBR respondents, the
An econometric approach of linear regression analysis was used to complete the results of the one-way test.

**Linear Regression Analysis**

The linear regression econometric approach using the ordinary least squares (OLS) method is used to predict the accuracy of the effect that occurs between the independent variable (X) and the dependent variable (Y). This analysis was conducted to identify the factors that influence the socio-economic conditions of MBR on the income aspect of MBR. The proxy used is the monthly average household expenditure.

As for the independent variables in a number of these regression models, there are several aspects that are directly related to the characteristics of FLPP such as the duration of getting FLPP, the value of FLPP installments per month, the distance from the house to the city center, and the duration of the tenor. The model also includes a number of control variables for the characteristics of the respondents, including the number of family members, the occupation of the head of the family, whether or not the husband and wife works, and ownership of motorized vehicles.

The linear regression model in this study is as follows:

\[ Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \beta_6 X_{6i} + \beta_7 X_{7i} + \beta_8 X_{8i} + \varepsilon_i \]  \ ...(1)

where:

- \( Y_i \): average household expenditure per month as income proxy (Idr)
- \( X_{1i} \): length of time to get the FLPP (Month)
- \( X_{2i} \): FLPP monthly installment (Idr)
- \( X_{3i} \): distance to the city center (km)
- \( X_{4i} \): duration of the installment (year)
- \( X_{5i} \): number of family members (person)
- \( X_{6i} \): dummy of household head occupation sector. 1 = formal sector, 0 = informal sector
- \( X_{7i} \): dummy of whether or not the husband and wife work. 1 = yes, 0 = no (only one)
- \( X_{8i} \): dummy of the ownership of motorized vehicles (for transportation). 1 = have, 0 = not

An analysis was also carried out on the sub-sample by disaggregating respondents into two groups based on the average monthly family expenditure (a proxy for income or income) to enrich the results of the analysis on MBR respondents. Tier 1 is the average monthly expenditure of less than Rp. 2 million and Tier 2 is the respondent with the average monthly expenditure of more than Rp. 2 million. Consideration of the use of a threshold of IDR 2 million is because this figure is close to the estimated family poverty line. According to BPS, the poverty line in March 2021 was Rp.472,525/capita/month. Then on average, one Indonesian household has 4 to 5 family members.
RESULTS AND DISCUSSION
Social and Economic Impact of FLPP PPDPP on Developers

This section presents a summary of survey results on FLPP beneficiary developers through BLU PPDPP. There were 179 developers who filled out the online questionnaire. The characteristics of developer respondents can be seen from the length of time the company was founded and the length of time they joined the FLPP program. The developer respondents who distributed the most FLPP were companies that had only been established for less than 10 years about 145 developers (81%). Furthermore, the next largest developer respondents are developers who have been around for 11-25 years (24 developers). Meanwhile, respondents who have been established for more than 25 years were only 10 developers (6%). The duration of the establishment of a development company has more value than a new company related to the credibility and image of the company in the eyes of consumers.

Furthermore, based on the developer’s affiliation with BLU PPDPP in distributing FLPP, the most respondents who distributed FLPP in this survey were respondents who started distributing FLPP from 2015 to 2019, which were 124 developers. Meanwhile, companies that have distributed FLPP since 2015 and 2020 were 30 and 25 developers, respectively. Although FLPP is a program that aims to reduce the housing backlog that occurred in 2010 (reaching 13.6 million units); the number of developers who have just started to join in distributing FLPP from 2015 is a follow-up impact of the government’s policy regarding the One Million Houses Program for MBR launched in 2015.

Table 1. The Impact of Joining in Distributing FLPP for Developers

<table>
<thead>
<tr>
<th>No</th>
<th>Indicators</th>
<th>Average</th>
<th>p-value</th>
<th>Conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Employment of field workers</td>
<td>3.65</td>
<td>0.000***</td>
<td>After the developer joins the FLPP, there is an increase in the absorption of field workers</td>
</tr>
<tr>
<td>2</td>
<td>Professional employment</td>
<td>3.47</td>
<td>0.000***</td>
<td>After developers join FLPP, there is an increase in professional employment</td>
</tr>
<tr>
<td>3</td>
<td>Highly educated workers</td>
<td>3.30</td>
<td>0.000***</td>
<td>After developers joined the FLPP, there is an increase in highly educated workers</td>
</tr>
<tr>
<td>4</td>
<td>Total company assets</td>
<td>3.69</td>
<td>0.000***</td>
<td>After the developer joins the FLPP, there is an increase in the number of company assets</td>
</tr>
<tr>
<td>5</td>
<td>Number of houses sold</td>
<td>3.89</td>
<td>0.000***</td>
<td>After developers joined FLPP, there is an increase in the number of housing units sold</td>
</tr>
<tr>
<td>6</td>
<td>Company image</td>
<td>3.96</td>
<td>0.000***</td>
<td>After the developer joined the FLPP, there was an increase in the company’s image</td>
</tr>
</tbody>
</table>

Description: ***; **; * indicate significance at 1%, 5%, 10% significance levels.
Source: Surveys’ data (2021)

Table 1 shows the results of the t-test on all observed socio-economic indicators. The results show that there is a significant impact of FLPP on developers at the 1%
level of significance (all the indicators P-value less than 1%). Thus, it can be concluded that the existence of FLPP has an impact in particular in the form of an increase in the absorption of field workers, the absorption of professional workers, the average number of highly educated workers, the number of company assets, the number of housing units sold or under construction, as well as the image of the company.

The length of time a company is founded is certainly one of the considerations for people who want to buy a house. The track record of developing companies building houses with good quality is one of the main considerations for the community. If viewed based on the age grouping of companies that distribute FLPP, development companies in the 11-25 years range on average have a relatively higher perception rating compared to other age groups of companies. Developers in this age range of the company are not considered new or have been around for a while, but they already have experience and a good image from the community. By distributing FLPP, both the company’s image and the number of units sold to companies aged 11-25 years have a value of 4.12 which is quite high compared to other indicators. The complete results can be seen in Table 2.

<table>
<thead>
<tr>
<th>No.</th>
<th>Indicators</th>
<th>0 - 10 year (n=145)</th>
<th>11 - 25 year (n=24)</th>
<th>&gt; 25 year (n=10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Employment of field workers</td>
<td>3.65 (0.001)**</td>
<td>3.79 (0.000)**</td>
<td>3.30 (0.217)</td>
</tr>
<tr>
<td>2</td>
<td>Professional employment</td>
<td>3.45 (0.000)**</td>
<td>3.62 (0.001)**</td>
<td>3.10 (0.406)</td>
</tr>
<tr>
<td>3</td>
<td>Highly educated workers</td>
<td>3.26 (0.001)**</td>
<td>3.58 (0.002)**</td>
<td>3.20 (0.278)</td>
</tr>
<tr>
<td>4</td>
<td>Total company assets</td>
<td>3.66 (0.000)**</td>
<td>3.87 (0.000)**</td>
<td>3.80 (0.043)**</td>
</tr>
<tr>
<td>5</td>
<td>Number of houses sold</td>
<td>3.86 (0.000)**</td>
<td>4.12 (0.000)**</td>
<td>3.70 (0.066)*</td>
</tr>
<tr>
<td>6</td>
<td>Company image</td>
<td>3.92 (0.000)**</td>
<td>4.12 (0.000)**</td>
<td>4.10 (0.020)**</td>
</tr>
</tbody>
</table>

Description: ***, **, * indicate significance at 1%, 5%, 10% significance levels.
Source: Surveys’ data (2021)

Furthermore, Table 3 shows that the duration of joining FLPP (since 2020) has a relatively higher average perception of the impact of changes compared to companies that have long joined in distributing FLPP. In 2019 and 2020, there was an adjustment in house prices that had not increased for the last 5 years (2014). This condition creates an incentive for companies that have just joined and have received subsidized housing prices that are ready to be marketed to MBR at a fairly high price. The adjustment of the selling price of subsidized houses in 2019 and 2020 which increases by 10 million rupiah is expected to improve welfare for developers and become an incentive for developers to continue to provide subsidized housing for low-income households in order to realize the government’s one million houses program.
Table 3. Impact of Joining in Distributing FLPP for Developers based on Length of Joining

<table>
<thead>
<tr>
<th>No.</th>
<th>Indicators</th>
<th>Before 2015 (n=30)</th>
<th>Since 2015 (n=124)</th>
<th>Since 2020 (n=25)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Employment of field workers</td>
<td>3.67 (0.008)***</td>
<td>3.61 (0.000)***</td>
<td>3.80 (0.000)***</td>
</tr>
<tr>
<td>2</td>
<td>Professional employment</td>
<td>3.50 (0.000)***</td>
<td>3.44 (0.000)***</td>
<td>3.56 (0.000)***</td>
</tr>
<tr>
<td>3</td>
<td>Highly educated workers</td>
<td>3.47 (0.007)***</td>
<td>3.26 (0.002)***</td>
<td>3.28 (0.045)***</td>
</tr>
<tr>
<td>4</td>
<td>Total company assets</td>
<td>3.70 (0.000)***</td>
<td>3.69 (0.000)***</td>
<td>3.72 (0.000)***</td>
</tr>
<tr>
<td>5</td>
<td>Number of houses sold</td>
<td>3.70 (0.004)***</td>
<td>3.92 (0.000)***</td>
<td>3.96 (0.000)***</td>
</tr>
<tr>
<td>6</td>
<td>Company image</td>
<td>3.83 (0.000)***</td>
<td>3.98 (0.000)***</td>
<td>4.00 (0.000)***</td>
</tr>
</tbody>
</table>

Description: ***, **, * indicate significance at 1%, 5%, 10% significance levels.
Source: Surveys’ data (2021)

Social and Economic Impact of FLPP PPDPP on Low-Income Communities

In this section, the findings from a survey of low-income communities (MBR) will explain the impact of FLPP obtained on a number of social and economic aspects of MBR. The initial identification of the social and economic impacts of providing FLPP through the PPDPP was analyzed using a one-sample t-test approach. Respondents were asked to rate according to their perspective, how their social and economic conditions were after obtaining the FLPP. The socio-economic conditions in question include income, education, health, employment, as well as several quality of life measures that include access to electricity, access to clean water, and internet infrastructure.

Based on the results of the t-test on the 7 socioeconomic indicators studied in the aggregate, there are improvements in each of these indicators (see Table 4). This condition is indicated by the p-value which indicates the decision to reject H0, meaning that there is a significant improvement in welfare. Given that the respondents who answered, the scale used in the assessment, and the statistical hypothesis were the same, then the average value of the respondents’ answers could be compared and ranked. The higher the average in a socio-economic aspect, the more respondents perceive that there is an improvement in welfare. The highest average was found in family health (3.62), followed by access to electricity (3.61), family education (3.52), family income (3.50), access to clean water (3.47) and internet infrastructure (3.25).

Health aspect increase higher than other indicators because more and better housing increases the welfare of housing occupants, especially in health. Access to affordable housing, therefore, can enable families to spend more on food and health care, which can improve health outcomes. The evidence points specifically to improved health conditions, but there are other benefits such as less stress and increased security, especially for children and women (Doling et al, 2013). Study from Glupker & Ogura (2021); Meltzer & Schwartz (2016) shown that an eased household budget constraint reduces food insecurity and increases spending on health care, with evidence of improved shortterm health. While the long-term impact on education is
also likely, strong evidence exists mostly for families that become able to move to better neighborhoods. Children in low-income families that receive housing subsidies are more likely to have access to an adequate amount of nutritious food and to have a good or excellent health, than children in similar families on the waiting list for housing assistance.

**Tabel 4. t-test Result on 7 Socio-economic Indicators from MBR**

<table>
<thead>
<tr>
<th>No.</th>
<th>Social-economic aspects</th>
<th>Average</th>
<th>t value</th>
<th>p-value</th>
<th>Conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Income family</td>
<td>3.50</td>
<td>14.93</td>
<td>0.000</td>
<td>There is an improvement in welfare in the aspect of family income</td>
</tr>
<tr>
<td>2</td>
<td>Family education</td>
<td>3.52</td>
<td>16.29</td>
<td>0.000</td>
<td>There is a fix well-being in terms of family education</td>
</tr>
<tr>
<td>3</td>
<td>Health family</td>
<td>3.62</td>
<td>18.91</td>
<td>0.000</td>
<td>There is an improvement in welfare in the aspect of family health</td>
</tr>
<tr>
<td>4</td>
<td>Work family</td>
<td>3.48</td>
<td>15.17</td>
<td>0.000</td>
<td>There is an improvement in welfare in the aspect of family work</td>
</tr>
<tr>
<td>5</td>
<td>Access electricity</td>
<td>3.61</td>
<td>18.43</td>
<td>0.000</td>
<td>There is a fix well-being in terms of access to electricity</td>
</tr>
<tr>
<td>6</td>
<td>Access to clean water</td>
<td>3.47</td>
<td>11.10</td>
<td>0.000</td>
<td>There is a fix well-being in terms of access to clean water</td>
</tr>
<tr>
<td>7</td>
<td>Internet infrastructure</td>
<td>3.25</td>
<td>5.92</td>
<td>0.000</td>
<td>There is a fix well-being in terms of internet infrastructure</td>
</tr>
</tbody>
</table>

Description: ***, **, * indicate significance at 1%, 5%, 10% significance levels.
Source: Surveys’ data (2021)

Affordable housing and the housing lending facilities initiatives typically include funding for new construction or redevelopment. In this study, the existence of FLPP shows that there is an improvement in welfare in the aspect of family income. This result in line with Glupker & Ogura (2021) by using regional multipliers to estimated for every $1 million spent on construction, there would be a $1.5 million increase in local economic output, a $0.5 million increase in labor earnings, and support for 10 jobs in Kent and Ottawa Country, Michigan.

The benefits obtained from FLPP include the existence of this subsidy that allows the community to allocate a larger portion of their income for other purposes such as health, education, and other important needs. This condition of course can have a positive impact on the welfare of the FLPP recipient community, which is reflected in, among other, the opportunity to improve the quality of family education, family work, and has implications for family income. Housing facilities also need to have housing quality standards, for example from the availability of access to electricity and clean water so that they are habitable with a healthy environment.

Data disaggregation is then carried out based on a number of criteria to deepen the results of the socio-economic impact analysis at the micro level. The disaggregation is carried out based on 3 criteria, namely: (i) how long it takes to get the facility,
(ii) the distance from the location of the subsidized house to the city center, and (iii) the level of expenditure (a proxy of income). Based on the old criteria for getting facilities, respondents were divided into three groups, namely respondents who received the earliest FLPP, namely before 2015, respondents who had received FLPP since 2015, and respondents who had received FLPP since 2020. Based on the criteria for distance from home to the city center, respondents were also divided into three groups, namely: the distance to the city center is less than 10 km, the distance to the city center is between 10 and 20 km, and the distance to the city center is more than 20 km. Based on the expenditure level criteria, respondents are divided into two groups, namely Tier 1 (expenditure below IDR 2 million) and Tier 2 (over IDR 2 million per month).

Based on the disaggregation, according to the length of time needed to get the facility, the majority of respondents were classified as having just received the FLPP, namely 349 people (64.6%) started to receive the facility since January 2020, the remaining 183 people (33.9%) started to receive the facility since January 2015 and only 8 respondents (1.5%) received the facilities before 2015 (see Table 5). The results of the analysis showed that in all categories and all aspects, there was a significant improvement in welfare. In the main socio-economic aspects such as income, education, health, and employment, the average rating of respondents who obtained the FLPP earlier tended to be higher. This in line with the study from Indarto & Rahayu (2015) about the indicators of community welfare can be seen from an economic and social perspective, the variables include: income level, amount of monthly expenditure or expenditure or consumption, production level, and investment. The result from this study indicates that a stable and continuous increase in welfare occurred along with the length of time people get FLPP.

<table>
<thead>
<tr>
<th>No.</th>
<th>Socio-Economic Aspects</th>
<th>Before 2015 (n=8)</th>
<th>Since 2015 (n=183)</th>
<th>Since 2020 (n=349)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Income family</td>
<td>3.75 (0.001) ***</td>
<td>3.52 (0.000) ***</td>
<td>3.49 (0.000) ***</td>
</tr>
<tr>
<td>2</td>
<td>Family education</td>
<td>3.62 (0.025) *</td>
<td>3.55 (0.000) ***</td>
<td>3.50 (0.000) ***</td>
</tr>
<tr>
<td>3</td>
<td>Health family</td>
<td>3.87 (0.003) ***</td>
<td>3.56 (0.000) ***</td>
<td>3.64 (0.000) ***</td>
</tr>
<tr>
<td>4</td>
<td>Family work</td>
<td>3.75 (0.010) ***</td>
<td>3.50 (0.000) ***</td>
<td>3.46 (0.000) ***</td>
</tr>
<tr>
<td>5</td>
<td>Access to electricity</td>
<td>3.50 (0.000) ***</td>
<td>3.50 (0.000) ***</td>
<td>3.68 (0.000) ***</td>
</tr>
<tr>
<td>6</td>
<td>Access to clean water</td>
<td>4.00 (0.004) ***</td>
<td>3.34 (0.000) ***</td>
<td>3.53 (0.000) ***</td>
</tr>
<tr>
<td>7</td>
<td>Internet infrastructure</td>
<td>3.12 (0.401)</td>
<td>3.20 (0.000) ***</td>
<td>3.28 (0.000) ***</td>
</tr>
</tbody>
</table>

Description: ***, **, * indicate significance at 1%, 5%, 10% significance levels.
Source: Surveys’ data (2021)
Furthermore, in terms of quality of life related to housing facilities such as access to electricity, clean water, and the internet, the pattern appeared to be just the opposite, namely the average rating of respondents who had just obtained FLPP tended to be higher. This pattern could occur because people who had just received FLPP mostly occupied housing that was already better in terms of facilities, compared to people who have participated in the subsidized housing program earlier. The construction of livable housing is expected to provide improvements to the environmental conditions of the community. Environmental changes from the slum environment should improve the community’s economy as indicated by the existence of new jobs that will increase people’s income (Manurung et al., 2019). As a form of development, every regional economic development is expected to increase employment opportunities and increase people’s income (Teja, 2015; Olugbenga et al., 2017).

Based on the disaggregation by distance to the city center in Table 6, the majority of respondents occupied houses that were less than 10 km away from the city center, namely 377 people (69.8%). The remaining 100 people (18.5%) lived in houses that were 10-20 km away from the city center, and 63 respondents (11.7%) lived in houses that were more than 20 km away from the city center. The results of the analysis showed that in all categories and all aspects there was a significant improvement in welfare, except for the internet infrastructure aspect for respondents whose houses were more than 20 km from the city center. This result indicated that internet access was still limited and unequal, especially in areas far from urban areas.

<table>
<thead>
<tr>
<th>No.</th>
<th>Socio-economic Aspects</th>
<th>&lt;= 10 km (n=377)</th>
<th>10.1 - 20 km (n=100)</th>
<th>&gt; 20 km (n=63)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Income family</td>
<td>3.53 (0.000) ***</td>
<td>3.41 (0.000) ***</td>
<td>3.48 (0.000) ***</td>
</tr>
<tr>
<td>2</td>
<td>Family education</td>
<td>3.52 (0.000) ***</td>
<td>3.54 (0.000) ***</td>
<td>3.46 (0.000) ***</td>
</tr>
<tr>
<td>3</td>
<td>Health family</td>
<td>3.67 (0.000) ***</td>
<td>3.44 (0.000) ***</td>
<td>3.60 (0.000) ***</td>
</tr>
<tr>
<td>4</td>
<td>Work family</td>
<td>3.53 (0.000) ***</td>
<td>3.33 (0.000) ***</td>
<td>3.40 (0.000) ***</td>
</tr>
<tr>
<td>5</td>
<td>Access electricity</td>
<td>3.65 (0.000) ***</td>
<td>3.51 (0.000) ***</td>
<td>3.56 (0.000) ***</td>
</tr>
<tr>
<td>6</td>
<td>Access to clean water</td>
<td>3.54 (0.000) ***</td>
<td>3.21 (0.042) *</td>
<td>3.48 (0.000) ***</td>
</tr>
<tr>
<td>7</td>
<td>Internet infrastructure</td>
<td>3.26 (0.000) ***</td>
<td>3.31 (0.003) ***</td>
<td>3.08 (0.276)</td>
</tr>
</tbody>
</table>

Description: ***, **, * indicate significance at 1%, 5%, 10% significance levels.
Source: Surveys’ data (2021)

The general picture in all aspects assessed was that the average rating tended to be higher for respondents whose houses were closer to the city center. This finding was in line with the issue in the distribution of subsidized mortgages raised in the 2020-2024 RPJMN where MBR houses were increasingly moving away from the city center with minimum supporting infrastructure such as clean water, electricity, and internet.
As one solution, the construction of flats can be carried out so that the settlements built remain close to the city center and have an adequate facility. This solution in line with Nugroho & Satriavei (2015) study stated that many people in Solo City are interested in buying flats with housing credit facilitation as one of the solutions for housing development that is getting farther from the city center. However, the existing housing financing is still not optimal, so massive socialization is very necessary. This solution in line with Arieffiani (2014) that stated in his research about the Surabaya City Government’s policy in land use and the realization of good residential development is the development of Flats and Apartments because it has effectiveness that involves the actors and the environment. Demand for flats has continued to grow throughout recent years due to the inability of low-income families to afford standard housing, an insufficient supply of public housing units, and a lack of residential construction (Dwan et al, 2013).

Based on the disaggregation by household expenditure level in Table 7, 274 respondents (50.7%) had an average monthly expenditure of less than IDR 2 million (Tier 1 group) and 266 respondents (49.3%) had an average monthly expenditure of more than IDR 2 million (Tier 2 group). Expenditure in this study was used as a proxy for income. The results of the analysis showed that in all categories and all aspects, there was a significant improvement in welfare. A consistent pattern could be seen, namely the average rating of the Tier 1 group was higher than that of the Tier 2 group in the seven socio-economic aspects assessed. These results indicated that the greater benefits of FLPP were felt by lower income groups. The existence of a subsidy meant a reduction in spending on mortgage payments, and this certainly had a bigger impact on people with lower incomes.

Table 7. T-Test Results based on Disaggregation by Average Monthly Expenditure

<table>
<thead>
<tr>
<th>No.</th>
<th>Socio-economic aspect</th>
<th>Average (p value)</th>
<th>Tier 1 &lt;= IDR 2 million (n=274)</th>
<th>Tier 2 &gt; IDR 2 million (n=266)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Income family</td>
<td>3.53 (0.000) '***'</td>
<td>3.47 (0.000) '***'</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Family education</td>
<td>3.53 (0.000) '***'</td>
<td>3.51 (0.000) '***'</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Health family</td>
<td>3.65 (0.000) '***'</td>
<td>3.59 (0.000) '***'</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Work family</td>
<td>3.54 (0.000) '***'</td>
<td>3.41 (0.000) '***'</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Access to electricity</td>
<td>3.68 (0.000) '***'</td>
<td>3.54 (0.000) '***'</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Access to clean water</td>
<td>3.59 (0.000) '***'</td>
<td>3.35 (0.000) '***'</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Internet infrastructure</td>
<td>3.33 (0.000) '***'</td>
<td></td>
<td>3.16 (0.003) '*'</td>
</tr>
</tbody>
</table>

Description: ***, **, * indicate significance at 1%, 5%, 10% significance levels.
Source: Surveys' data (2021)
Factors Affecting the Socio-Economic Condition of MBR

The next discussion is an in-depth study of the factors affecting the socioeconomic conditions of the MBR as measured by expenditure (as a proxy for the measure of income welfare), in terms of FLPP variables and a number of control variables in the form of respondent characteristics. The approach used was linear regression analysis. The independent variables of FLPP characteristics included were the length of the FLPP, the monthly installments, the distance from the house to the city center, and the duration of the installments. Meanwhile, the independent control variables from the characteristics of the respondents included were the number of family members, type of work (formal or informal), husband and wife workers (yes or no), and motorized vehicle ownership (yes or no). There were 3 regression equations, namely the model for all respondents and disaggregation based on the level of expenditure into 2 categories (tiers). The results of the regression analysis on the three models are presented in Table 8.

Table 8. Regression Analysis of Factors Affecting Household Expenditure Level

<table>
<thead>
<tr>
<th>Free Variables</th>
<th>Coefficient (p-value)</th>
<th>Total (n=540)</th>
<th>Tier 1 (n=274)</th>
<th>Tier 2 (n=266)</th>
</tr>
</thead>
<tbody>
<tr>
<td>How long have you been getting FLPP?</td>
<td>0.276 (0.000)***</td>
<td></td>
<td>0.334 (0.000)***</td>
<td>0.019 (0.387)</td>
</tr>
<tr>
<td>the size installment per month</td>
<td>0.798 (0.000)***</td>
<td></td>
<td>0.801 (0.000)***</td>
<td>0.273 (0.000)***</td>
</tr>
<tr>
<td>Distance to the center city</td>
<td>0.019 (0.718)</td>
<td>0.097 (0.262)</td>
<td>-0.038 (0.075)*</td>
<td></td>
</tr>
<tr>
<td>Duration of installments</td>
<td>0.062 (0.683)</td>
<td>0.124 (0.638)</td>
<td>0.040 (0.532)</td>
<td></td>
</tr>
<tr>
<td>Number of family members</td>
<td>0.103 (0.339)</td>
<td>0.009 (0.959)</td>
<td>0.038 (0.392)</td>
<td></td>
</tr>
<tr>
<td>Head of household Job Dummy (1=formal, 0=other)</td>
<td>0.190 (0.094)*</td>
<td>0.489 (0.014)**</td>
<td>-0.022 (0.598)</td>
<td></td>
</tr>
<tr>
<td>Working husband and wife dummy (1=yes, 0=no)</td>
<td>0.187 (0.087)*</td>
<td>0.062 (0.742)</td>
<td>0.113 (0.008)**</td>
<td></td>
</tr>
<tr>
<td>Vehicle ownership dummy (1=yes, 0=no)</td>
<td>1.772 (0.000)***</td>
<td>3.324 (0.000)***</td>
<td>-0.060 (0.633)</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>22.79 (0.000)***</td>
<td>19.06 (0.000)***</td>
<td>4.62 (0.000)***</td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>25.56%</td>
<td>36.52%</td>
<td>12.58%</td>
<td></td>
</tr>
</tbody>
</table>

Description: ***, **, * indicate significance at 1%, 5%, 10% significance levels.
Source: Surveys’ data (2021)

The results of the regression analysis showed that the factors that had a significant effect on household spending (on all respondents) were the length of time they received the FLPP, the monthly installments, type of work, husband and wife workers, and ownership of motorized vehicles. The duration of the respondent to get the FLPP had a positive and significant effect on the level of household expenditure. This result was in line with the findings in the t-test analysis, that a stable and continuous increase in welfare occurred as the community got FLPP. Furthermore, when disaggregated, this significant effect tended to be found in groups of people with lower expenditures. This
also confirmed the results of the t-test that the greater benefits of FLPP were felt by lower-income groups of people.

The higher the monthly installment value, the higher the household expenditure for housing needs. This result was consistent with the fact that this installment was part of routine household expenses. Furthermore, when disaggregated, this positive and significant effect was found in both categories of expenditure levels. An interesting fact is that the coefficient value (elasticity) of this variable was higher in the group with lower expenditure (Tier 1). The proportion of expenditure on installments to total expenditure would be higher when the total expenditure (the denominator) was smaller, indicating a greater impact on people with lower incomes. There were even indications that these low-income people who were proxies for low expenditures (Tier 1) were late in paying their housing installments. The findings of the MBR survey results showed several reasons for the delay in house installments including sudden needs (medical fees, school fees, and so forth), late salaries and the effects of the covid pandemic (economic conditions, layoffs, and bankruptcy).

Research conducted by PPDPP and FEM IPB (2017) showed that there were several factors influencing the chances of a debtor to be in arrears in paying credit installments. These factors included the value of installments, percent of installments to total income, occupation (factory workers and self-employed), house area, motorbike ownership, and AC ownership. The study also stated that debtors who were in arrears in paying installments have certain reasons. Respondent debtors in previous studies stated that delays in paying installments were due to a sudden need, late paychecks, forgotten payment schedules, and sluggish business. Therefore, in general, it could be concluded that, debtors having a low percentage of installments (towards income), high income, definite employment (PNS/Private Employees, TNI-POLRI), large house area, and ownership of vehicles and housing facilities (AC, so forth) tended to never be in arrears. This information could be useful for mitigating PPDPP in minimizing defaults, especially the need for a special strategy for MBR with informal jobs. The implementation of the FLPP Strategy in The Emphasis of Credit Risk at PT Bank Tabungan Negara (Persero) Tbk (Asep, 2014), it is concluded that there are 4 strategies to implement the management and control of housing financing credit risk with the FLPP BTN scheme, one of which is increasing the distribution of subsidized housing financing with the FLPP scheme with transparency, right value, and right on target.

Furthermore, the regression results showed that the distance to the city center variable was not significant in all observations. It was only significant (at =10%) for the group with higher expenditure (Tier 2). The insignificant effect on the lower spending group, as well as the negative and significant effect on the higher spending group, indicated that the Tier 2 group tended to have higher mobility so that the closer it was to the city center, leading to suppression or reduction of spending.

The next discussion relates to the employment status of the head of the family, whether formal or not. The results of the analysis showed that employment status only
had a significant effect on groups of people with lower expenditures (Tier 1). This result indicated that in the Tier 1 group, the level of expenditure in families with heads in formal employment was higher than in families with heads in informal work. This condition could be illustrated in the comparison between workers (formal) and unskilled workers (informal). This situation was not seen in the group with higher expenditure (Tier 2), meaning that in the Tier 2 group, the level of welfare was relatively balanced between those who work in the formal and informal sectors.

Husband and wife’s working status had a significant effect on expenses in the Tier 2 group, while in Tier 1 it was not significant. This condition was because Tier 2 groups tended to have more husbands and wives working together compared to Tier 1, and thus, resulting in higher family expenses (or income).

The effect of motorized vehicle ownership on expenditures was significant in the Tier 1 group but not significant in the Tier 2 group. This condition was because in the Tier 2 group almost all of them owned a motorized vehicle, so the comparison between owning and not owning a vehicle was irrelevant. On the other hand, in Tier 1, not all had vehicles to support their activities, so there was a difference that those who own vehicles tended to spend more than those who do not.

**CONCLUSIONS**

The conclusions from the results of the analysis of the social and economic impacts of the provision of FLPP through the BLU-PPDPP at the micro level for the developer and MBR showed that the FLPP (housing financing liquidity facility) has a positive impact on both. Through participation in the distribution of FLPP, the developers feel a significant change, especially in the number of housing units sold and under construction, the company’s image, and the number of assets owned by the company. The track record of developers in building houses with good quality is one of the main considerations for the community. The positive impact or improvement of the socio-economic conditions of the MBR from the FLPP program is reflected through aspects of family income, family education, family health, family work, access to electricity, access to clean water, and internet infrastructure. The existence of a subsidy in the form of FLPP allows the community to allocate a larger portion of their income for other important needs such as health and education. The positive impact of the FLPP program tends to be greater on communities that have been receiving these benefits for a longer time, for people whose houses are closer to the city center, and for communities with lower levels of expenditure.

To maintain performance in existing conditions, a strategy is needed to minimize defaults, especially for MBR with informal jobs. To avoid overlapping land use between sectors and encourage the construction of vertical houses for low-income households and idle land use. Centralized Big Data that was integrated between the stakeholders is needed to involved would bridge various information in order to increase MBR’s access to decent and quality housing. Among them was the use of the SiKasep application to bridge and provide information for people who were interested in owning subsidized
housing by ensuring that they could see in detail the housing being developed. Meanwhile, with the SiKumbang application, the community would also receive a guarantee that the existence of the housing project could be accounted for. It is necessary to increase the carrying capacity of the budget for housing development for MBR because it has a multiplier impact on all sectors. The budget for housing lending facilities including from BUMN/BUMD in the provision of housing and utilization of contractual saving funds as a source of long-term funds as well as secondary market development for housing finance.

REFERENCES


