Inclusive approach: a perspective towards more equitable housing provision?

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Abstract

Purpose – *The purpose of this paper is to understand the dynamics of inclusive approaches to housing development programs directed at supporting low-income communities.*

Design/methodology/approach – *This study uses a mixed-methods approach by employing a combination of case study and survey methods, whereby the development process is studied through qualitative approaches and specific determinant comparisons of quantitative Z-tests. This study provides data from key informants: end-users (ten occupants), leaders of community-based organizations (2), and supporting non-governmental organizations (2).*

Findings – *These results indicate that an inclusive approach is more likely be able to provide low-income households with access to a variety of key resources that are identified as housing development priorities, particularly when compared with the supply-side approaches currently being promoted.*

Practical implications – *This study helps to encourage policymakers to think about more targeted and facilitative processes to meet the needs of public housing in Indonesia, a challenge that has resulted in ironic effects, and has not met the important challenges in providing access that is adequate for the people of Indonesia.*

Originality/value – *The current study provides data that provide evidence of positive value of inclusive approach to response the equitable issues in housing provision, particularly in Indonesia.*

Keywords *Conventional supply-side approach, Demand-driven development, Equitable housing, Housing delivery system, Inclusive housing approach, Social inclusive problem*

Paper type *Research paper*

Introduction

In recent decades, research indicates that economic growth does not always correlate with the improved conditions of social welfare (Sanyal, 1989; Sen, 2000). Although economic growth in a country is relatively high, poverty rates do not necessarily improve in the same relative patterns. For example in Indonesia, although the average economic growth is relatively high, with rates at or over 5 percent per year, the World Bank data in 2014 has also shown the economic inequality, especially on the income gap, which remains high. The World Bank's (2014) most recent data has shown an increase in Indonesia's Gini coefficient from 0.30 in 2000 to 0.41 in 2013. This phenomenon is explained by Alzugaray *et al.* (2012) and Sen (2000) as a social inclusion problem. The problem of social inclusion is a situation of disadvantage, in which an individual or a particular social group does not benefit because of their "marginalization" by another person or group from similar opportunities. In other words, opportunities for the development are accessible for the privileged, whereas a similar access is not available for the poor.

For a more nuanced explanation of social inclusion problem, Kanbur and Rauniyar (2010) express the need to distinguish the concept of growth and development. The concept of development therefore seeks to influence a more comprehensive discussion on the dimensions

of welfare (well-being) that must not simply be measured from the perspective of revenue (income). When linked to inclusive development, the concept of well-being therefore encourages development that takes into account more equitable distribution of social justice within a community. One way to understand social welfare is to view it in terms of social inclusion. Thus, when development is understood in terms of poverty, social inclusion can provide an important concept in overcoming structural conditions of poverty. Structural poverty is one which is caused by structural barriers that systematically exclude people from accessing similar opportunities as other groups on key resources that might allow them to change their conditions of poverty (Rejekiningsih, 2011).

The challenging phenomenon of social inclusion problem can also be observed from the Indonesian housing development point of view. Data on Housing Statistic 2000 show that in 2000 there were 2.48 million housing units in Indonesia that were simply left idle by its owner Badan Pusat Statistik or Indonesian Bureau of Statistics (BPS) (2000). Meanwhile, there were 2.3 million people who were living in houses that were classified as inadequate houses. Statistics on the condition of those houses were based on the valuation that not only these houses were physically improper for habitation, but also described as improper condition for habitation based on the social norms. Of the greater policy concern, it is ironic that the data show the number of idle houses exceeds the total number of housing units built by Perum Perumnas (Indonesian state-owned company in the form of public corporation operating in the field of housing and settlemen provision) and (Real Estate Indonesia: private company ascosiation in the field of housing and settlemen provision), since both corporate organizations were established in 1972 and 1974, respectively. By 2002, these agencies have collectively built 2.1 million units.

All the figures above indicate a potential major failure in the implementation of state housing development policy with the rollout of subsidized credit facilities in Indonesia – a phenomenon described by Kuswartojo *et al.* (2005). Further, Kuswartojo *et al.* (2005) also claimed that one factor contributes to the rise of the social inclusion problems in the housing sector is the policies that focus more on the supply side. In other words, the supply side addresses more on the interests of private developers rather than providing, due to consideration on the needs of end users. Development that focused on the supply side of housing construction has less incentive to support low-income communities, and in a larger sense, also indicates a misguided prioritization in the distribution of key development resources (Manaf, 2004).

Following in a line of critiques among researchers and housing policy advisors, Turner (1976) has classified the supply-side housing policy as a “heteronomous system.” This supply-side approach views a house as a product or as a noun (a thing) that is constructed for the owner in terms of investment interests of exchange value. Turner criticized this approach as failing to account for the sociocultural realities of an occupant (Sanyal, 1998). Instead, he offers a new conceptualization by viewing a house as a process or as a verb in which a house need not be seen as a static object but rather as a dynamic process that follows the changing conditions of its occupants.

Therefore, development policies must pay greater attention to the characteristics of potential occupants, being mindful that their conditions are also constantly evolving (Turner, 1978, 1983). Turner suggests an approach by promoting principles whereby the key housing development resources are brought closer, or managed entirely, by prospective occupants and end users (Turner and Fichter, 1972). This autonomous system is the conceptual antithesis of the heteronomous system. A potential house should not be distributed as a finished good (a thing) through a pure market mechanism. Therefore, by promoting this conceptual reorientation, the objectives of housing development policies can be geared more toward efforts that meet the needs of those who genuinely require assistance.

As consequences, the heteronymous system can be characterized by the approach used to formulate housing policy where the government tends to predict the housing needs through a quantitative mathematical method that does not directly meet the realities of the communities who are most in need of public assistance in housing. Kuswartojo *et al.* (2005) shows that the quantitative mathematical method utilized in housing policy formation is irrelevant to be implemented by the housing development. The supply of houses by the private sector

does not meet the housing needs or the existing community conditions, especially those who are most in need of public assistance in housing. As a result, the houses offered in the marketplace are not targeted to the right buyer (those who are in need of public housing), due to the price being not affordable.

The concept of inclusive approaches in housing development policy

As described above, the major factor contributes to the challenges of achieving more equitable social inclusion in the housing sector has been the overwhelming reliance on policies oriented to the supply side, which provide greater attention to private interests rather than accommodating the interests of end users. This paper aims to examine this claim in further detail through systematic analysis. Therefore, this section will describe the overarching concept of inclusive development and the ways in which it can be formulated and applied in the development of housing practice and policy.

To help elucidate a theoretical framing on housing policies of social inclusion, this paper looks at the existing research. Kuswartojo *et al.* (2005) divide formal policy strategies on housing development into two organizing frameworks, namely: supply-side systems and demand-side systems. The supply-side system is defined through housing development approaches that do not identify policies based on needs. Private developers are often the actors that shape the process. Therefore, houses are built to match potential buyers through market-based mechanisms. In this framework, houses are commodities or goods that are sold in the housing market. The system is seen as self-regulating on the open market, which means priorities are less concerned with the needs of the buyer (house seeker), and rather, more sensitive to their ability to pay. This system is defined by a perceived self-regulating society of house seekers that are expected to match their purchasing power to housing prices, which is usually dependent on the location, housing facilities, environment, and other specifications.

In contrast to the supply-side system, the demand-side puts the house seeker at the epicenter whereby the main considerations are the actors that initiate development activities to meet their housing needs. Policies on the demand side are usually initiated by nonprofit organizations, either governmental or non-governmental organizations (NGO). Housing development goals are directed toward fulfilling societal needs, especially those with immediate needs for housing. As end users of these houses, approaches follow deliberate steps (including preparation, planning, implementation, development, and post-construction maintenance) in order to help occupants realize and sustain their household.

In other words, the framework of this demand-side system upholds a process in which the houses that are built are able to meet the specific needs of the end user because the developer is at once the owner and the occupant. From this viewpoint, the houses are therefore built to meet the social needs of families than simply for investment purposes. This more socially directed mechanism (in contrast with the free-market regulating functions) is especially helpful in determining directed entitlements from public assistance and who has the requisite need and rightful access to a variety of key resources that are made available in housing sector development policies.

In the context of housing policy development for low-income communities (MBR) in Indonesia, the government can employ a range of options targeted at supply- and demand-side systems by offering various incentives to both developers and other organizations. For governments that wish to build affordable housing for MBR, offering various subsidy schemes and other policy instruments are also available. To select the type of approach to be pursued, due consideration must be given to ensure that the target populations are consulted and that the dynamics within those communities are well understood. Policies must also fulfill the existing laws and government mandates for public assistance.

In 1994, the government introduced a type of inclusive development approach that outlined a housing development scheme through the Community-Based Housing Development Program (P2BPK). The conceptual and operational understanding of P2BPK is explained in the Ministerial Decree of Housing, Number: 06/KPTS/1994, which lays out the general guidelines on P2BPK.

Briefly, the basic principle of P2BPK is to develop activities on strategies of community-based programs that should in practice focus on, and leverage the strengths of the community. Community members, as potential end users, are not positioned as the object of development, but rather the subject of overall development planning. The nature of the programming is therefore to develop the ability of the community in a broader sense, not only to develop the ability to build physical structures. This orientation of development programming is different from building capacity for procurement on the supply side that looks to foster conditions of exchange value, but rather, focuses on the demand-side factors oriented more toward use value.

P2BPK is conducted by groups that are called as community-based organizations, which work to collaboratively build houses based on local needs identified at the community level. These efforts are also further assisted by Development Consultants that have knowledge and experience in housing development policy and practice. The P2BPK Development Consultants provide strategic support functions as they also are expected to function as mediators, facilitators, and connect local needs to key resources in order to realize housing development priorities.

Under conditions of supply-side free-market mechanisms, it would be impossible to achieve the goals that support the whole community approach in the housing sector. Therefore, government assistance through demand-side programming in housing is still urgently needed. Demand-side approaches embodied by programs such as the P2BPK provide a hopeful foundation for building alternative strategies that help to meet the needs of supporting those who most need support to fulfill their housing needs. Therefore, houses that are built with the guidance and support of demand-side policies and approaches can help to fill the gap and urgent housing needs that are fundamental to many Indonesian families.

As described above, a major systematic factor contributing to the challenges of social inclusion in the context of housing policy development is that efforts have been too much oriented toward supply-side approaches, which prioritize the interests of private developers. However, examples also show that additional attention to the demand-driven factors can provide an important foundation for developing more targeted strategies at filling the gap among the needs of end users that are most in need of housing.

This paper presents results from a study comparing two housing projects in Central Java. The first case employed a conventional approach and was implemented by Yayasan Prasetya, while the second case embodies the inclusive development approach that was implemented by LSM PPMPS.

Data and methods

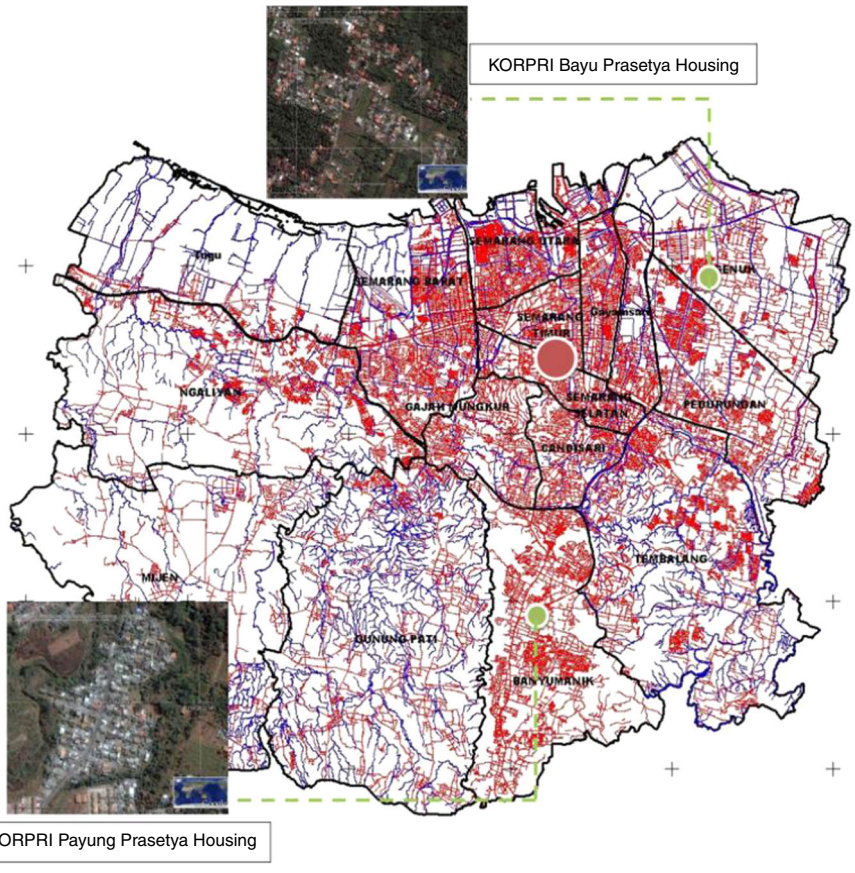
The focus of this research is to understand the dynamics of inclusive approaches (demand-driven) to housing development programs directed at supporting low-income communities. The research looks at the extent to which existing cases can answer some of the key questions and challenges identified by experts in housing policy and practice.

This study uses a mixed-methods approach by employing a combination of case study and survey methods, whereby the development process is studied through qualitative approaches and specific determinant comparisons of quantitative *Z*-tests. The key informants in this study are: end users (ten occupants), leaders of community-based organizations (2), and supporting NGOs (2). Triangulation methods were also used in this research to maintain credibility of research data through complementary semi-structured interviews.

This study compares results (outcomes) of two subsidized housing development cases in the city of Semarang (Figure 1) that implemented categorically different approaches:

1. KORPRI (the Indonesian Civil Servants Corps) Bayu Prasetya (BP) Housing (227 units) is defined as a housing project using an inclusive approach; and
2. in contrast, KORPRI Payung Prasetya (PP) Housing (225 units) falls into the category of conventional approaches (supply side).

Figure 1 Two housing projects of the study



Source: KORPRI Bayu Prasetya and KORPRI Payung Prasetya

There are specific reasons why these two projects were selected as cases for comparison:

1. Both projects were implemented using opposing frameworks whereby the KORPRI BP Housing development project was implemented through an inclusive development approach based on identified demand-driven needs; whereas the KORPRI PP project was implemented through a conventional approach based on supply matched with availability.
2. Both housing projects were built in 1999-2000 in the city of Semarang for low-income civil servants who are eligible for a subsidized credit facility program called the housing ownership credit (KPR) provided by the government.
3. Both housing projects were built with the support of the KPR credit facility, which provide subsidized mortgage support from the government. The types of houses were built under the categorization of modest houses (low-cost housing or RS) that was known at that time under the subcategories of RS and RSS.
4. Although both housing projects are not necessarily close to each other, they are located the same distance from the center of Semarang at ±10 km, or at approximately 30 minutes ground transportation time. Both are considered to be located at the peri-urban areas of Semarang.

The study was conducted in 2010 after more than ten years the houses were built (2000) and handed over to the target group. The development process of both housing projects can be evaluated from various observations throughout the process, by researchers through relevant

meetings that began at the formation of group meetings and ended through the construction work, and beyond. It includes interviews with relevant actors and observation participant. The research also utilized a questionnaire to measure project performance between the two sites by measuring responses to questions about "equity" or "affirmative" by applying two indicators, namely:

1. The status of occupancy or occupancy rate:

RQ1. Is there any significant difference between the inclusive and conventional approaches in the number of houses built, and to what extent do they meet the social needs or investment purposes? (Are houses more likely to be built to meet social needs of the occupants or are they for investment purposes?).

2. Income characteristics (income levels) of the target group:

RQ2. Are there any significant differences between the two projects in the numbers of low-income households that were able to access housing? (The more low-income households can get access to the housings, the better the development performance of the project.)

Both of these indicators were compared using statistical *Z*-test analyses. This technique is used because the sample size taken in each group is quite large ($n > 30$), whereby the n in houses from group 1 (BP or the inclusive development approach) is 47 out of a total population of 227 units and group 2 (PP, the conventional approach) is 41 out of a total population of 225 units.

As such, to answer the above research questions, the arranged hypotheses are as follows:

Hypothesis related to occupancy rates:

H0. μ (average occupancy rate for housing development of group 1 (inclusive approach) is equal to group 2 (conventional approach).

HA. μ (average occupancy rate of housing development of group 1 is not equal to group 2).

Hypothesis related to income level:

H0. μ (average income of the target group of housing development of group 1 is equal to group 2).

HA. μ (average income of the target group of group 1 is not equal to group 2).

To test both hypotheses, this study uses a significance level of 5 percent or equal to a 95 percent confidence level. The level of significance in this statistical analysis refers to $\alpha = 0{:}05$.

Implementation of housing development projects KORPRI BP (inclusive) and KORPRI PP (conventional)

This section provides the background of the two KORPRI housing development activities in Semarang, Central Java, which applied two different approaches. Hereafter, the background description will provide the meaning that inclusive and conventional approaches are understood and how it was applied in these two cases. Furthermore, this also describes housing characteristics of each location, the area, and price differentiation of land, plot size, and other physical characteristics, as well as the social characteristics of inhabitants from both locations.

Background of KORPRI BP and KORPRI PP Housing development projects

The development of KORPRI BP and KORPRI PP Housing projects were facilitated by the KORPRI Institute of Central Java. KORPRI is the association of civil service employees in Indonesia. One of its general functions is to provide the needs and well-being of its members. The Central Java KORPRI initiative sought to provide support to employees by providing housing for low-income members especially those who work in the city of Semarang.

Survey results conducted by KORPRI to its members showed that one of the main concerns of many low-income civil servants are their lack of access to housing. One of the major factors is low rank of salary, which made them unable to reach the market prices. On the basis of this finding, the KORPRI board initiated plans to develop housing for civil servants with affordable prices.

The intention was to enable the low-income civil servants to access housing and to improve the welfare of KORPRI members.

To implement housing development programs, the Central Java KORPRI has set up a foundation called Yayasan Sapta Prasetya. One of its main tasks and functions is to facilitate housing development for lower income civil servants. KORPRI had quickly realized that housing development requires a very long and complicated commitment so that the task of this foundation was to carry out all the housing-related procedures smoothly until its completion.

Some of the key concerns of the foundation were to help in finding solutions for low-income civil servants on financial and land acquisition aspect. In terms of financial issues, the foundation supported civil servants to gain access to subsidize mortgage loans offered by the government. Land acquisition challenges mainly revolved around issues that land prices were continuing to rise, and therefore KORPRI helped to reduce the cost of land acquisition by searching for unused *Tanah Bengkok* (state land: in terms of customary land title). The foundation was able to access specific plots of land located in Pudak Payung and Bangetayu Wetan, on the outskirts but within the city border of Semarang. Both locations were selected and purchased as housing sites because the price of land was still relatively low at that time, and the land classifications also fit the spatial planning designations set forth by the city of Semarang as residential areas. These locations became the housing development projects of KORPRI PP and KORPRI BP.

Implementation framework for the KORPRI BP and KORPRI PP Housing development projects

Although both of these housing projects were intended for similar classes of low-income civil servants identified as requiring specific housing needs, and furthermore receive government subsidized (mortgage) credit, in fact, the historical background and implementation approaches of both projects were quite different. The development of the KORPRI PP project was initiated by Yayasan Prasetya and was built using the conventional approach that focus on the supply side, whereas this development project was initiated by NGOs using the demand-driven development principles.

As mentioned previously, this study aims to compare the outcomes and performance of the two development approaches. Table I gives a more comprehensive explanation on the implementation of the two projects. Overall, KORPRI PP Housing development process was conducted through a conventional housing project approach by making communities as the

Table I Comparison of housing development process

No.	*Element*	*Same/different*	*KORPRI Payung Prasetya (conventional)*	*KORPRI Bayu Prasetya (inclusive)*
1	Development initiator	Same	KORPRI of Semarang City	KORPRI of Central Java
2	Technical implementer	Different	Yayasan Sapta Prasetya established by KORPRI	NGO – PPMPS independent
3	Implementation pattern	Different	Top down (supply side)	Bottom up (demand driven)
4	Beneficiaries selection method	Different	*Closed* Civil servants request housing of KORPRI on administrative terms Selection process is carried out through the involvement of officials only and is a closed process Selection results are subjective and not open to public	*Open* Civil servants request housing of KORPRI on administrative terms The selection process is carried out by involving the NGO and administratively verified by the NGO Selection results are open to public
5	Transparency method	Different	*Selection results provided to selected candidates*	*Selection results are given to community*
6	Developer	Same	Built by contractor	Built by contractor
7	Decision maker	Different	Contractor selection process is conducted and supervised by Yayasan Sapta Prasetya The community is only required to meet all the requirements and is not involved in the decision-making process of housing development No NGO guidance	Contractor selection process is conducted and supervised by the end-user Decisions and management authority with end-users NGO guidance

Source: Researcher Analysis

objects of development, whereby they were not included in the planning process. The implementation was carried out by Yayasan Sapta Prasetya, as this organization has overseen the housing construction processes and procedures from beginning to end.

Meanwhile, the development of KORPRI BP Housing project was implemented under the principles of an inclusive development approach. This put the community at the forefront of the development process in which the end users were actively involved from the beginning of the planning stages (including selecting participants, defining plots, and determining the types of houses) to the construction process (formation of community-based organization, procurement, and supervision of the contractor). In other words, KORPRI gave their confidence to the community to plan and implement the process alongside the supportive assistance from NGO (such as PPMPS), which helped to facilitate the management of development resources more independently. The NGO was selected for its knowledge in inclusive housing development approaches, and provided the guiding support from beginning to end.

Characteristics of KORPRI BP and KORPRI PP Housing projects

KORPRI PP Housing is located in the Village Pudak Payung with approximately 10 km from Semarang city center or about 45 minutes by vehicle. Administrative borders are:

- North: Gedawang Village;
- East: Watugong Indah Village;
- West: Gedawang Village; and
- South: Gedawang Permai Housing.

The number of houses in this residential is 225 units with a similar floor space of 21 m^2. Upon completion, administratively, the 225 units were formed into seven neighborhood clusters or one overall community association. The overall housing land area of KORPRI PP Housing is 47,500 m^2, or 4.75 Ha. The price per meter of land before it was developed in 1998 was approximately USD1/m^2, and therefore the overall price of land acquired was USD47,500. The size lots sold were 120 m^2.

Meanwhile, KORPRI BP Housing is located in the Bangetayu Wetan Village, Genuk, Semarang. This village is located approximately 10 km downtown of Semarang or +45 minutes by car. The boundaries of this KORPRI Prasetya Bayu Housing include:

- North: Sedayu Indah Housing;
- East: Sembungharjo Village;
- West: RT 2 RW3 Bangetayu Wetan Village; and
- South: Block C KORPRI BP Housing.

The total number of houses built in the KORPRI BP Housing project is 227 units with various types of sizes, which range between 21, 27 and 36 m^2. The houses were built administratively into five neighborhood clusters and into one larger community association. BP Housing was called RW 5, and located within the administrative system of Bangetayu Wetan village (see Table II).

The total land area is approximately 118.721 m^2 or 11.87 Ha. In general, the size of the plots consists of two types, one of 200 m^2, and the other, 150 m^2. The research area is located in Block A and Block B. The price per square meter of land before it was developed is USD1/m^2. After being developed, the land is sold at various prices based on the location, quality, and availability of basic infrastructure services.

Comparative analysis of inclusive and conventional approaches to housing development

Occupancy rate

Housing performance is often rated merely in terms of investment purposes, but one aspect of subsidized housing development program performance can be measured by the number of

Table II Characteristics of KORPRI Payung Prasetya Dan Bayu Prasetya Housing projects

No.	Element	Same/different	KORPRI Payung Prasetya	KORPRI Bayu Prasetya
1	Group of beneficiaries	Same	Low-income civil servant who do not have own house	Low-income civil servants who do not own house
2	Financing scheme	Same	Subsidized housing	Subsidized housing
3	Land prices	Same	USD1/m^2	USD1/m^2
4	Location/time	Same	10 km/± 30 minutes	10 km/± 30 minutes
5	Number of houses	Different	225	227
6	Lots area	Different	120 m^2	120 and 150 m^2
7	Type of house	Different	Same for all types: 21 with	Various types of 21, 27 and 36
8	Building specification	Different	Plastered brick walls	Concrete blocks and plastered brick walls

Source: Researchers Analysis

houses being built to meet the needs of the community. This performance is measured from the status or level of occupancy (occupancy rate) of housing post-construction.

To answer the research question:

RQ3. Whether there is a significant difference in development performance between conventional and inclusive approaches, there are various aspects that can be analyzed in terms of occupancy levels.

This study uses inferential statistical analysis techniques of *z*-testing. However, before applying *z*-test comparisons, the researchers identified the following considerations about occupancy.

Foremost, first-hand field observations were conducted to identify the behavior and conditions of end users about the occupant and the houses. On the basis of the results of field observations, the researchers classified owner behavior into five categories of residential status: occupied by the owner, occupied by a child or close relative, leased to others, sold or transferred to another person, and left empty by their owners.

To assess the performance of both housing projects to be tested, five nominal categories were created and given values according to the level of accuracy in terms of following their objectives:

1. populated by the owner (value 5);
2. inhabited by close relative (value 4);
3. rent/lease (value 3);
4. sale/transferable (value 2); and
5. left empty (value 1).

The values are given with the assumption that the value 5 (occupied by owner) is the highest performance value and the value 1 is the lowest performance in terms of meeting the broader objectives of public housing initiatives. This value is multiplied by the frequency (f) to calculate the average value of each (groups) approach to development.

In order to test the question whether the target accuracy (average occupancy) of housing development using an inclusive approach is more/less successful than the conventional approach, the hypothesis statement can be formulated as follows:

Hypothesis:

H0. μ (average of occupancy rate with an inclusive approach is the same as the conventional approach).

HA. μ (average of occupancy rate with the inclusive approach is different from the conventional approach).

To test this hypothesis, the study uses a significance level of 5 percent, or equal to a 95 percent confidence level. The level of statistical significance is $\alpha = 0{:}05$.

The *z*-test can be done using an excel data analysis tool to find the occupancy levels of development between the two approaches (see Table III).

The calculation result in Tabel III (*z*-test: two sample means) shows that the value of $P(Z \leqslant z)$ one-tail at 0.0165 is smaller than $\alpha = 0{:}05$. Thus we can conclude that *H0* is rejected or *HA* is accepted. In other words, the level of housing occupancy rates among the two are not statistically the same when comparing the two approaches.

When we look at the average calculation table (mean), it shows that group 1 (inclusive) BP has an average value of 3.1 and group 2 (conventional) PP has a value of 2.7. The average value of BP Housing is greater than PP, which means that the development of housing projects using an inclusive approach is statistically much more likely than the conventional approach to achieve the targeted goals of housing policy occupancy rates.

Analysis of income levels among the target group

Besides the occupancy rate indicators described above, measuring income level bias in this study also helps to identify the dynamics among the target group (i.e. the more low-income occupants accessing and maintaining a house, the better the performance of targeted development in housing policies). This assumption helps to formulate the research question in terms of the support being provided to those that most need assistance, namely:

RQ4. Is there a significant difference in the number of low-income occupants gaining and maintaining access to housing when comparing inclusive and conventional approaches?

To address this question, the hypothesis is explained as follows:

H0. μ (average income of the target group is the same between inclusive and conventional approaches to housing projects).

HA. μ (average income of the target group is unequal when comparing inclusive and conventional approaches).

To test this hypothesis, this study uses a significance level of 5 percent or equal to 95 percent confidence level. The level of statistical significance is $\alpha = 0{:}05$.

The *z*-test can be conducted using the excel data analysis tool to calculate the income levels between the two approaches. The *z*-test calculation results are as follows (Table IV).

The calculation result in Table IV (*z*-test: two sample means) shows that the value of $P(Z \leqslant z)$ one-tail at 0.00129054 is smaller than $\alpha = 0{:}05$. Thus, the conclusion is that *H0* is rejected or *HA* is accepted. In other words, the levels of income between the two housing development approaches are not equal.

To compare the performance of two housing projects in terms of level income of the target groups will be tested the difference of the two target groups with four categories were valued according to the level of income, as follows:

1. IDR 1.000.000 – IDR 1.500.000 (value of 1)
2. IDR 1.500.001 – IDR 2.000.000 (value of 2)

Table III *Z*-test (two sample means) for occupancy rate of both development approaches

	Inclusive	*Conventional*
Mean	3.425531915	2.829268293
Known variance	1.901943	1.545122
Observations (*n*)	47	41
Hypothesized mean difference	0	
z	2.132878483	
$P(Z \leqslant z)$ one-tail	0.016467348	
z critical one-tail	1.644853627	
$P(Z \leqslant z)$ two-tail	0.032934696	
z critical two-tail	1.959963985	

Source: Researchers Analysis

Table IV *Z*-test (two sample for means) of income levels for both development approaches

	Inclusive	*Conventional*
Mean	2.59574468	3.17073171
Known variance	1.02867715	0.59512195
Observations (*n*)	47	41
Hypothesized mean difference	0	
z	−3.0136715	
$P(Z \leqslant z)$ one-tail	0.00129054	
z critical one-tail	1.64485363	
$P(Z \leqslant z)$ two-tail	0.00258107	
z critical two-tail	1.95996398	

Source: Researchers Analysis

3. IDR 2.000.001 - IDR 2.500.000 (value of 3)
4. > IDR 2.500.000 (value of 4)

The value was given as the assumption that a value of 1 (the lowest level of income) in the best value because it is more appropriate for the target group of the target activity (high performance) and a value of 4 (the highest level of income) is the value that is less good because it is less appropriate for the target group of the target activity (low performance). This value is multiplied by the frequency (f) to calculate the average value of each (groups) housing.

When looking more closely at the average calculation in Table IV (mean), it shows that group 1 (inclusive) BP has an average value of 2.596 and group 2 (conventional) PP has an average value of 3.171. The average value of BP housing is smaller than PP, which suggests that housing development with an inclusive approach has much better in achieving the goals of the targeted housing policy (lower income groups) than the conventional approach.

Conclusion

The comparison of housing development performance conducted in this study is carried out through inclusive and conventional approaches for both housing projects in Central Java. The result of this study shows that from a statistical perspective, an inclusive approach can increase the likelihood of meeting development goals in terms of occupancy and income. This leads to the expectation that promoting more inclusive and consultative approaches with the end user will more likely meet the social needs of the targeted end user.

Several factors that lead to people choose not to occupy their purchased houses is for the general reasons that the target group of Prasetya Bayu Housing is more concerned with the social aspect rather than PP Housing that are more focused on the economy aspect (investments). This study helps to encourage policymakers to think about more targeted and facilitative processes to meet the needs of public housing in Indonesia, a challenge that has resulted in ironic effects, and has not met the important challenges in providing access that are adequate for the people of Indonesia.

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