

# Strategic Collaborative Model of BGAC+ for Sustainable Housing Development in Indonesia

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**Abstract.** Sustainable Housing in Indonesia is necessary to achieve well-being of Indonesian people. Earlier researches have shown the importance of Sustainable Housing as well as its approaches to implement the concept in Indonesia. However, the problem of housing backlog has been dominated the government to only focus on the economic criteria than social and environmental one. This paper attempts to propose a stakeholders model which is based on the collaboration between the government, academician, business, community and non-government organization. By using quantitative approach and samples from the district of Bandung, the result reveals that perception gaps are exist between the business sectors with the community, academician and non-government organisation in the implementation of SH. Therefore, the government, plays an important role in the collaborative actions for SH development in Indonesia.

## 1. Introduction

Sustainable Housing (SH) has been acknowledged as an ideal approach in housing development. Embarking from the concept of sustainable development which was firstly introduced in the report by the World Commission on Environment and Development, *Our common future*, Sustainable Housing emphasises on the fulfillment of three components in housing development: economy, social and environment [1]. The SH concept suggests that a housing should not only economically affordable to people, particularly those who are coming from low-income families, but also should provide better accesses to social needs and safe environment.

Earlier research has been done on the discourse of SH. While the Reference [2] underscores the lack of consensus over the definition of SH, the references from [3] to [6] operationalise the criteria of SH which is suggested in the housing development. As concluded in [7], SH impacts significantly to the health and well-being of the society. This, has been documented for instance, by [8] with some cases from Thailand, Myanmar and Fiji Island.

In Indonesia, earlier studies by [9], [10] and [11] have also defined the SH criteria. Nevertheless, the reference [12] evaluated the implementation of SH in Indonesia, by using various cases in Indonesia. The study suggests that a collaboration among stakeholder is needed to implement SH. The conclusion is also supported by [13].

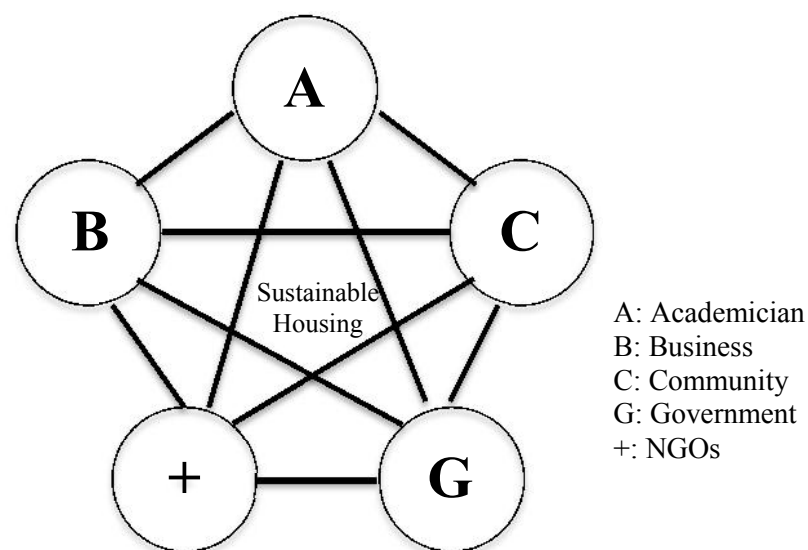


As the ‘housing backlog’ has been dominated the housing policies of the Indonesian government, limited study has been done on the stakeholder’s collaboration for SH development in Indonesia. With a circa 11.38 million housing *backlog*, the government has been prioritising its housing policy with given more attention to the affordability aspect of housing, than other SH factors, *i.e.* social and environmental elements. Among those 11.38 million *housing backlog* households, circa 93% of them are representing a low-income families with a maximum income 7 million rupiah per month [14].

Following earlier researches by [15] to [19], which studied on stakeholder’s collaboration in SH development, the reference [20] indicated that stakeholder’s collaboration is the key factor to the successful implementation of SH. Therefore, this paper aims to examine an empirical study on the possibility of stakeholder’s collaboration for SH development in Indonesia. While the reference [21] elaborated various stakeholder’s model of collaboration, this paper uses an adapted *penta-helix model* of stakeholder, which involves government (G), business (B), academician (A), community(C) and non-government organisations(+). The incorporation of these five elements are necessary to implement the SH development in Indonesia, following earlier studies by [22], [23], [24], and [25].

## 2. Stakeholder’s Model and Methods of Study

The study has been conducted to answer the possibility of stakeholder’s collaboration for SH development in Indonesia. Using a *Penta-helix* stakeholder’ model, the study involves five elements of stakeholder: Government (G), Business (B) including housing developer and creditor, Academician (A), Community (C) and Non-government organization (+). The use of *penta-helix* model, made a distinguished approach to the earlier research on the subject, which emphasized various stakeholder’s model collaboration in sustainable housing development, *i.e.* by [26], [27] and [28] with *dual-helix* model of collaboration, and [29] with *triple-helix* model of collaboration, as well as [30] with a quad-helix of stakeholder’s collaboration. The following figure 1 depicts the proposed stakeholders collaborative model (BGAC+).



**Figure 1.** BGAC+ model of Stakeholder’s collaboration for SH in Indonesia

Following the earlier study by [31], a strategic collaboration among stakeholder could be implemented if perception gaps among stakeholders are identified. Therefore, this study focuses to identify the perception gaps between each of the stakeholders. The study, then examine the null hypothesis of ‘there is no perception gap among stakeholder in sustainable housing developmet’.

### 2.1. Instrument

A semantic differential questionnaire with a likert-scale answer's questionnaire is constructed, by adapting the SH criteria by [32], [33] and [34]. An additional dimension of legal aspects is incorporated in the instrument to accommodate the contextual assessment for Indonesia. Therefore, the questionnaire consists of six dimensions of SH: SH criteria, legal aspects, government roles, private/business roles, academician roles and NGO roles. The following related questions are included in the six-dimensions of the questionnaire, which is designed in the closed-ended' questions: housing affordability, housing accessible & adaptable to social and environment, adequate & suitable housing, meets the need of individual's well-being (liveability), resource efficient, the quality of construction materials, safety and legal aspects of housing.

### 2.2. Samples

The Bandung district of West Java is used as the research area, where the questionnaires are distributed and samples are collected. The total of 100 respondents represent the elements of stakeholders (BGAC+), which have their concern to the sustainable housing development. All respondents were interviewed during the study period of May-June 2017. The samples include the respondents from the local government of Bandung district (25 respondents), Business institutions (15 developers and creditors), Community (30 people, including those who are coming from formal and informal sectors of occupations), Academician (20 people), and Non-government organisations (10 institutions).

### 2.3. Method of analysis

A quantitative analysis is conducted by using descriptive statistics to describe the stakeholders perception towards sustainable housing by identifying their expectation, in comparison with the perceived ones. Thus, a ratio between perceived and expected ones is measured to explain stakeholder's perception towards SH development. An additional statistical test through unpaired-test of Analysis of Variance (ANOVA) among the stakeholder's perception is conducted to examine the perception gaps hypothetically.

## 3. Results and discussion

The study uses the Bandung district of West Java province in Indonesia as the region has a high number of the *housing backlog* problem. According to the long-term regional planning of housing development of the local government of Bandung district, the numbers of households in Bandung district, which do not own houses in 2010 were about 119,805 families. The number is predicted to increase to 787,716 households in 2025 from the total 1,160,325 households who are demanding for the housing. It means that the development in housing sectors could only provide around 372,609 houses to the households. The number is among the highest in comparison with Bandung city, Bandung Barat district, West Bandung district, Cimahi city, as well as Sumedang district [37].

Relying only to the government to solve the housing problem will not given in a significant impact in the decreasing of *housing backlog*. An alternative approach *i.e.* collaboration among stakeholders is suggested. Therefore, stakeholder's analysis is necessary to identify in which factors of sustainable housing each of stakeholders could collaborate. The following section reveals the result from the stakeholder's perception on sustainable housing in Bandung district.

### 3.1. Stakeholder's perception on SH in Bandung district

A hundred respondents, representing five elements of stakeholders were interviewed on their perception towards the implementation of sustainable housing development in Indonesia, in general, and Bandung district in particular. The following table reveals the result.

As seen in the Table.1, stakeholder's perception towards the SH development and implementation are varies. While business institutions, *i.a.* housing developer and creditor, seen that the legal aspects of housing development, has been implemented effectively (0.82), whereas Academician underscore that

roles of NGOs has been effectively accomplished (0.74). In contrary, while the Government valued that the roles of NGOs were not effective (0.42), the community sees the roles of academics were less effective (0.30). The results reveals among the stakeholders of sustainable housing development, it is indicated that, descriptively there are perception gaps among the stakeholders on the SH development which are need further assessment if a collaboration is going to implemented.

**Table 1.** Stakeholder's perception on SH development

<b>SH Dimensions</b>	<b>Stakeholder's perception*</b>				
	<b>Business</b>	<b>Gov't</b>	<b>Academics</b>	<b>Comm</b>	<b>NGO</b>
SH criteria	0.77	0.57	0.55	0.65	0.52
Legal aspects	0.82	0.57	0.58	0.80	0.75
Gov't roles	0.81	0.68	0.58	0.52	0.63
Private roles	0.81	0.61	0.56	0.61	0.50
Acad. roles	0.64	0.48	0.56	0.30	0.54
NGO roles	0.64	0.42	0.74	0.34	0.66

Source: Prabantarikso *et al* (2017)

Note : \* the score is an average ratio between perceived and expected answer for each dimension.

### 3.2. Stakeholder's perception on SH criteria

As the study focuses on the fulfilment of SH criteria in the housing development, the following figure reveals the stakeholder's perception towards the SH criteria.

The scores in the Table 2, shows the overall perception ratio of the stakeholders towards each of the SH criteria. The average ratio between stakeholder's perception of what they perceived and what they expect is considered low (0.61). In addition to that, by considering the average ratio (0.61) as the minimum condition to achieve in housing development, yet, there are many factors, which are still considered under the expectation of the stakeholder. Those factors are: housing price (*H\_Price*), housing distance to workplace (*H2Work*), transportation availability (*Trans\_Avail*), availability of Childcare (*H2Childcare*), availability of garden (*Garden*), housing quality (*H\_Quality*), availability of trash/garbage (*Trash\_Avail*), the quality of housing material (*Material\_Qual*), availability of facilities for Youth (*YouthFacility*), sufficiency of housing rooms for the family (*No\_ofRoom*), and housing availability for social activities (*Social\_Activity*). In general, the stakeholder consider that the housing in Bandung district is considered expensive for low-income families (*H\_Price* ratio of 0.55), the distance to workplace is considered far (*H2Work* ratio of 0.56) and are still not fulfill the SH criteria, *i.g.*, lack of trash facility (*Trash\_Avail* ratio of 0.51), lack of garden facilities (ratio of 0.54) as well as low-quality of housing (*H\_Qual* ratio of 0.55 & *Material\_Qual* ratio of 0.57).

In contrary, there are some SH criteria, in which, according to the stakeholders, already reached their expectation. Those are: the housing rent (*H\_Rent*), Mortgage (*Mortgage*), Housing availability (*H\_Avail*), Rent availability (*R\_Avail*), housing distance to nearest shop for daily needs (*H2Shop*), housing distance to school (*H2School*), housing distance to health care/clinic (*H2Health*), housing distance to the availability of recreation facilities (*H2Recreation*), and the availability of religious facilities (*Relig\_Facility*).

**Table 2.** Stakeholder's perception on SH criteria

SH Criteria	Ratio between Perceived and Expectation
H_Price	0.55
H_Rent	0.63
Mortgage	0.65
H_Avail	0.74
R_Avail	0.86
H2Shop	0.70
H2Work	0.56
H2Trans	0.55
Trans_Avail	0.55
H2School	0.65
H2Health	0.65
H2Childcare	0.52
H2Recreation	0.65
Garden	0.54
H_Quality	0.55
Trash_Avail	0.51
Material_Qual	0.57
Relig_Facility	0.76
YouthFacility	0.55
No_ofRoom	0.55
Social_Activity	0.60
*average ratio	0.61

Source: Prabantarikso *et al* (2017)

Although the house price is considered high, the availability of housing rent (H\_rent ratio of 0.63) became an alternative for the families, as well as the availability of mortgage by the creditor (Mortgage ratio of 0.65). Nevertheless, although the available housing is considered neglecting the SH criteria (social and environment), stakeholder seek that the availability of religious facilities are meeting their expectation. (*cf.* Table 2).

### 3.3. Perception Gaps among Stakeholder on SH

The previous section has shown that in general, the housing condition in the study area, are not reaching SH requirements, particularly in the social and environmental factors. They are several factors contribute to the condition. Apart from there are many challenges in the implementation of SH [38], SH is considered as an expensive investment in the eyes of developer [39]. However, the cases in Thailand, Myanmar and Fiji Island as well as the cases which was analysed in some places in Indonesia, shown that collaborative could be an alternative to solve the SH problem [40] [41]. In this context, an analysis on the perception gap among stakeholders in SH is necessary for the collaborative actions[42]. By conducting analysis of variance (ANOVA) for unpaired group of stakeholders, the following table depicts the result of the hypothesis testing on the perception gap among stakeholders towards SH in the study area.

**Table 3.** Perception Gaps among Stakeholder on the SH development (*p*-value)

	B	G	A	C	+
Business (B)		0,47911	0,00706*	0,03399*	0,01911*
Government (G)	0,47911		0,38345	0,84849	0,40685
Academician (A)	0,00706*	0,38345		0,48537	0,93567
Community (C)	0,03399*	0,84849	0,48537		0,47911
NGO (+)	0,01911*	0,40685	0,93567	0,47911	

Source: Prabantarikso, *et al.* (2017) Note: \* reject null-hypothesis at 5 % level of significance

As it is revealed in the Table 3 above, there are perception gaps exist between Business entities (B) with Academician (A), Business entities (B) with the Community (C) and Business entities (B) with the NGOs (+). The result of this study indicated, that the implementation of SH through strategic collaboration amidst stakeholders, could only be realised if the perception gaps among the stakeholders are not exist. Therefore, this study recommends that a strategic collaboration among stakeholders for sustainable development requires any attempt to reduce the perception gap. Among all the interviewed stakeholder, only the 'government' does not have any perception gap with other stakeholders. It means that, the government should play more important roles to accommodate each of stakeholder's interest in the implementation of SH through stakeholder's collaboration. The strategic collaboration among stakeholders (BGAC+) for SH development, as it is shown in the Figure 1, can be implemented if the perception between business and the community, business and NGOs, and business and academician is minimised.

#### 4. Conclusion

This paper has elaborated the stakeholder's perception, in the implementation of SH development the research area of Bandung district. The result reveals that each stakeholder has different priority in terms of which factors in the SH criteria, has been incorporated in the housing development. It could be concluded that a strategic collaboration among stakeholders for SH development requires the government to play more importance roles in the implementation.

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