The Role of Islamic Banking Financing for Afforadable Housing in Realizing Sustainable Development: An Analytic Network Process (ANP) Method

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ABSTRACT. *The government of the Republic of Indonesia is to provide appropriate affordable housing programs for low middle incomes. Based on the physical attributes and traditional social aspects of the low-middle income household, and social environment in the residential area, as well as their contribution to economic growth. This paper evaluates the level of prioritization of Islamic Banking Financing for affordable housing program of low-middle income families in Realizing Sustainable Development. Simultaneously, the research offers access to sustainability measurement of Islamic banking to finance affordable housing on both the social and environmental dimensions. This research utilizes An Analytic Network Process (ANP) Method to evaluate and select Sustainable Development Goal Ranking The results of this study are found that Sustainable Development Goal 8: Promote inclusive and sustainable economic growth, employment and decent work for all, is most important for Islamic banking financing for affordable housing program in Realizing sustainable Development comparing to the Sustainable Development Goals (SDGs) of goas number 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation, and Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable. Furthermore, according to the experts of Islamic Housing financing, the objective of Islamic banking financing for Affordable Housing In Realizing Sustainable Development are; to protect low-income people and people in vulnerable situations and reduce the risk for slum dwellers.*

Keywords: Islamic Banking; Sustainable Development Goals (SDGs); Analytic Network Process (ANP)

INTRODUCTION

Housing is a basic need that offers protection, safety, and a dwelling to store other necessities. It also serves as the community centre and the environment for neighbourhood activity. As the Universal Declaration of Human Rights 1948, article 25, states housing as one of the fundamental of human's rights. "*Everyone has the right to a standard of living adequate for his or her family's health and wellbeing, including food, clothing, housing, medical care, and essential social*

services". However, the existing housing market mostly caters to middle-class to upper-class consumers, making it difficult for the lower income group workers to find affordable accommodation that meets their demands (Ibrahim et al., 2023).

There are several advantages can be obtained from the provision of affordable housing programs, such as increased access to secure housing, a decrease in homelessness and housing instability, and enhanced social and economic well-being of low income household in Indonesia. Affordable housing programs do, however, present a number of serious issues, such as housing Cost Barriers (Disalvo & Yu, 2023). Those related to financial sustainability, insufficient supply, segregation, and the concentration of poverty.

Many Research shows affordable housing fosters both physical and mental health by lowering stress, pollutants, and transmissible diseases. Additionally, low-income families with limited finances might apply the money saved up for affordable housing toward other needs like food and medical bills. These research consistent with the Sustainable Development Goals (SDGs) that addressing a wide span of issues such as poverty eradication, gender equality, climate change mitigation, quality education and so forth (Habitat for Humanity, 2021). The programs of affordable housing of republic Indonesia can guarantee fundamental requirements, cheap housing also improves their social wellbeing, strengthens their sense of community, and gives them a sense of belonging.

The interlinkages among the goals of Islamic banking for providing affordable housing financing and Sustainable Development Goals (SDGs) can help identify mutually reinforcing measures and minimise trade-offs. Some preliminary work has already been initiated for defining and mapping these interlinkages among the SDGs, which have been reviewed in the latter part of this paper. Morevover, the affordable housing program is to achive sustainable development golas (SDGS) and to break the cycle of poverty by giving people access to more work options, since job security is still a major worry in cultures all over the world (Moghayedi et al., 2023).

The aim of this study is to provide an analysis of the ways in which the objectives of Islamic banking can be linked to the financing of affordable housing in order to achieve the Sustainable Development Goals (SDGs), as well as some analytical choices for the SDGs that have been produced by numerous scholars. A project on SDG targets and indicators with an emphasis on SDG interlinkages and data analysis using An Analytic Network Process (ANP) Method was started by the affordable housing program. Under this study, a thorough analysis of the scientific literature and policy papers given by pertinent international bodies working on SDG indicators has discovered the connections between affordable housing and SDG targets.

LITERATURE RIVIEW

This section offers an extensive review of literature on the theoretical underpinnings of Islamic Banking Financing, Affordable Housing, Sustainable Development, and Analytic Network Process (ANP) Method.

Islamic Banking

One of the key foundations of Islamic finance is Islamic banking, which provides a range of services and products to its stakeholders and clients in accordance with

Islamic law and principles (Karim et al., 2022). Islamic banks operates under light of shariah principles, and all activities approved from their shariah advisor boards before they can begin any activities or offerings. Therefore, it is crucial and beneficial to identify the elements influencing the legitimacy of shariah approvals (Abubakar Siddique et al., 2023).

The Islamic bank is a specialized financial entity tasked with advancing important areas of strategic relevance to the overall Sustainable Development Goals (SDGs) (Madah Marzuki et al., 2023), the SDGs especially for socioeconomic growth and human's life. The Islamic banking systems tend to increase social happiness (Kazak et al., 2023), stabilize the financial system, and reduce inequality economic gap. Furthermore, the Islamic banking sector is better prepared to handle banking crises. With regards to the issue of prohibitively expensive public housing in Malaysia (Maulina et al., 2023). The Islamic banking in Indonesia can implement a model known as al-Hikr (long-term leasing structure) for state lands and waqf in Indonesia country based on the regulation.

Affordable Housing

There is disagreement about the definition of affordable housing (Alhajri, 2022), however affordable housing acknowledges the requirements of families whose earnings are insufficient to purchase suitable home in the market (Li et al., 2020). Moreover, according to Zhang et al., (2023) defines affordable housing is housing that is designed and managed by the government, made available to particular demographics, with restrictions on building specifications, retail pricing, or rental requirements, and that serves as a social security structure. Thus, housing that helps lower income households find and afford suitable dwelling without needlessly incurring financial hardship is referred to as affordable housing. In Indonesia, affordable housing is housing for low-income individuals (MBR) who are supported by the government through financing programs offered by conventional or Islamic banks but have limited ability to buy housing.

Sustainable Development Goals (SDGs)

A key element of the 2030 Agenda for Sustainable Development, housing is crucial to reaching several of the SDGs, or Sustainable Development Goals. Economic, educational, and health gains are correlated with adequate and reasonably priced housing. For families, the process of housing repair serves as a rung on the ladder out of poverty. Affordable Housing provide financial assistance to low-income households, enabling them to meet their rental responsibilities and afford suitable home (Borbely, 2022). The greater community benefits from affordable housing program since these program can be lessen inequality and promoting resiliency to natural disaster (Habitat for Humanity, 2021). The integration of Sustainable Development Goals (SDGs) and affordable housing program is needed to build indicators into national and regional strategies for the development of statistics, as well as the consolidation of national statistical systems and the governing role of national statistical offices. For example; a positif association between school quality and housing affordability (Disalvo & Yu, 2023).

The housing sector is essential to reaching the 11 (eleventh) aim of the SDGs(Ezennia, 2022)which deals with the issue of urban sustainability. Since,

Urbanization has led to both improvements in society and the economy globally. However, it has also resulted in further decline and poverty due to insufficient local management of natural resources and inadequate funding for essential services and housing for urban residents (Battisti, 2023). Therefor the offardable housing can be solution of with the issue of urban sustainability and it is also to achive the goal of SDGs number 8 (eight) deals with the issue of promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all (Choi et al., 2019). Thus, the affordable housing can be undestood as tool to eradicating poverty and other form to combat climate change, protect our and forests, enhance health and education, and reduce inequality in addition to promoting economic growth (Chinna, Rajan, and Aradindaraj, 2022).

Since establishing the responsibility for affordable housing program to overcome the structural injustices such as how to make an solution to the individuals becoming homeless or without homes. Moreover, the affordable housing program contribute in establishing cities are hubs for ideas, commerce, culture, science, productivity, social development and much more. At their best, cities have enabled people to advance socially and economically. However, many challenges exist to maintaining cities in a way that continues to create jobs and prosperity while not straining land and resources as the goal of SDGs number 11 (eleventh).

Analytic Network Process (ANP)
Saaty (2016) created ANP, a multi-criteria decision-making tool that assesses feedback between the elements of structured models. In other words, when hierarchical comparisons alone are insufficiently realistic, ANP helps with the evaluation process (Alamdari et al., 2023). When prioritizing the alternatives, for instance, it makes more sense to analyze the criteria related to the alternatives, as their weight may vary depending on the option that is chosen. An ANP approach is a simple multi-attribute decision-making tool that allows for the integration of several alternatives into the decision model. It is useful for comprehending both qualitative and quantitative aspects and takes into account the links that exist between hierarchies (Magableh & Mistarihi, 2022). There are many research using ANP, such as assesing the systemic influence of social media on pandemic emergency preparedness initiatives. It has been effective in synthesizing feedback and dependence results both inside and between element, criterion, or alternative clusters to develop a framework for making decisions without assuming that each element is independent, as in a hierarchy (Selerio et al., 2022).

RESEARCH METHOD
In order to begin the research design, the paper will asses and evaluate a number of relevant to this study. This approach will assist in exploring the role of Islamic banking financing for afforadable housing in realizing sustainable development. This study employs the ANP multi-criteria decision making technique to determining the priorities of Islamic banking financing for afforadable housing in realizing sustainable development.
Particular industry
The Sustainable Development Goals include the right to appropriate housing as

one of these fundamental values. Since, Housing as building that create a sense of place and dignity, building community cohesion as well as one's social and financial network and assets, as stated Housing and Resettlement Area Law (Law No. 1/2011). The affordable housing financing for low income household is important program for nurturing Indonesia people, especially low income families. Therefore, this research involved Islamic financial Industry, especially Islamic Banking as subsidized housing financing partner to low income household.

Design of the research
For the procedure, ten experts representing various approaches to the topic have been chosen. The experts have experiences within minimum of 10 years in housing financing liquidity facility program for low income people.
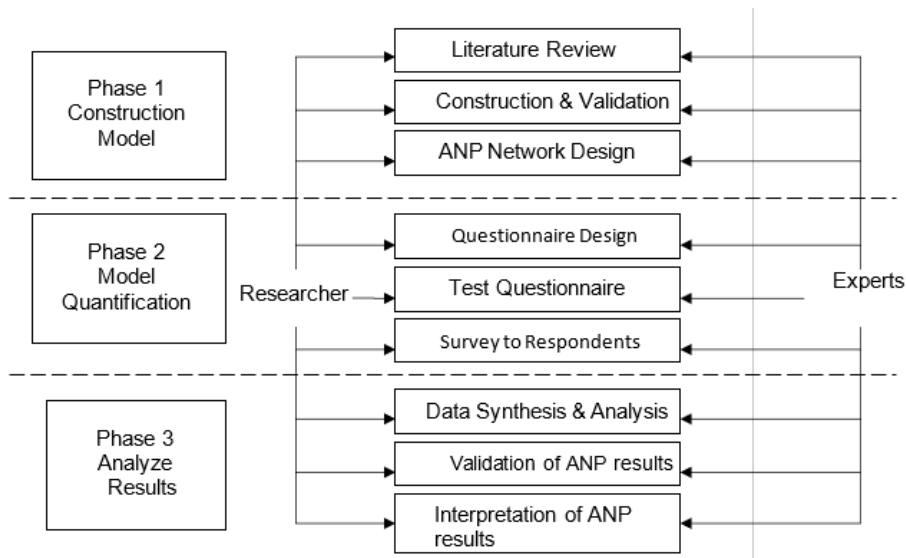
The analytic network process (ANP)
The analytical network process (ANP) as a comprehensive approach is utilized due to its essential excellence to focus on the analyses of interdependent relationships among the factors. ANP enables evaluations that necessitate more intricate assessments beyond mere hierarchical comparisons. When determining the order of importance for different options, it is more rational to thoroughly examine the criteria linked to each alternative. The variability of the criteria's value is contingent upon the option that is selected. This section presents the methodological development of the integrated problem-solving strategy employed in the current research.

The suggested qualitative measuring scale comprises nine linguistic values that are subsequently converted into qualitative values, forming an ordinal scale with positive integers ranging from 1 to 9. Nevertheless, the greater the precision of the experts' assessments, the more precise and accurate the final solution will be. To mitigate the uncertainty in accurately converting verbal scales into numerical data, particularly when dealing with human judgments, fuzzy logic is employed. Further elaboration on this topic can be found in Section 3.2. However, the potential inconsistency, as measured by the consistency ratio (C.R.), should be below 0.1. This is a strict requirement that aligns with statistical measurements and ensures that the comparisons are consistent and adhere to the transitivity property.

The following is study of the role of islamic banking financing for afforadable housing in realizing sustainable development: an analytic network process (ANP) method flow using ANP according to (Thomas L. Saaty, 2016):

Figure 1. Flow process of this research

Source: Data processed by the author, 2024

Super Decision

Supe Decisions Software is used for decision making by including dependency and feedback factors. It applies Analytic Network Process (ANP) principles [15]. The software provides tools to create ANP models. This study employs super decisions version of 3.2.0. The models consist of clusters of elements (or nodes) instead of elements (or nodes) organized in levels. Thet ANP model has goal clusters containing goal elements, criteria clusters containing criteria elements and alternative clusters containing alternative elements as schema follow:

Figure 2. ANP Model for this study
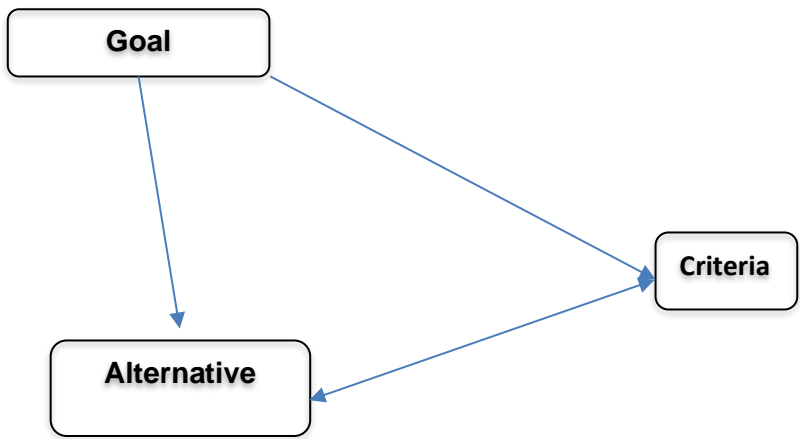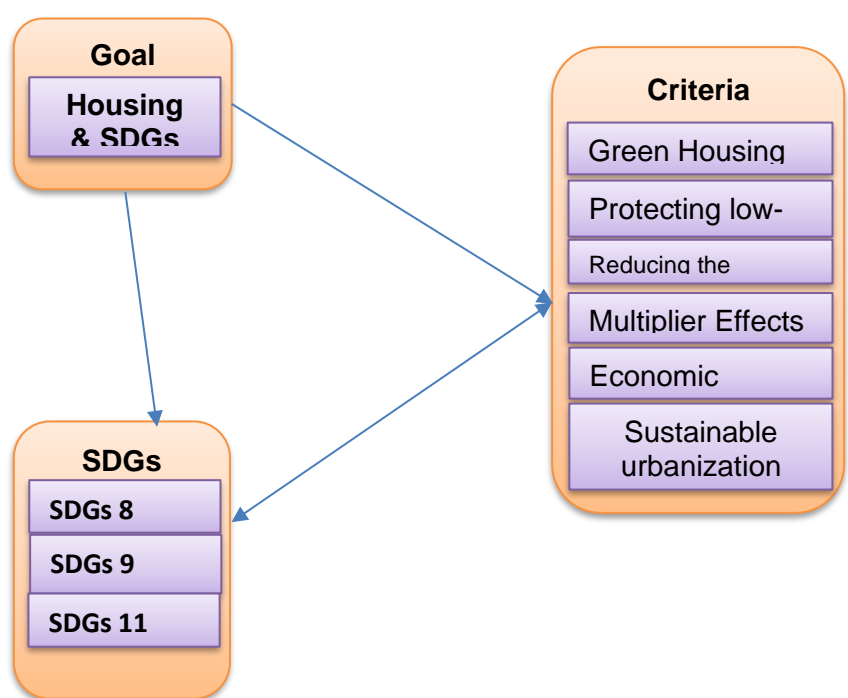
Source: Data processed by the author, 2024

When clusters are connected by lines, it means that the nodes within them are connected. Clusters containing decision alternatives should be named Alternatives. Nodes and Clusters are organized alphabetically in the calculation, so an easy way to control the order is to start the name with a number. A hierarchical decision model has a goal, criteria that are evaluated for their importance to the goal, and alternatives that are evaluated for how favorable they are with respect to each criterion. An abstract view of such a hierarchy is shown in figure 2. Goals, Criteria and alternatives are elements in decision making, or nodes.

RESULTS AND DISCUSSION

Criteria and Alternatives for Assessment of The Role of Islamic Banking Financing for Afforadable Housing in Realizing Sustainable Development Goals.

The criteria used in this study, the role of Islamic banking financing for affordable housing in realizing sustainable development an analytic network process (ANP) method are green housing, protecting low-income people, reducing the number of slum houses, multiplier effects for economic, economic growth, sustainable urbanization. Furthermore, the alternatives assessed consisted of Sustainable Development Goal 8: Promote inclusive and sustainable economic growth, employment and decent work for all, is most important for Islamic banking financing for affordable housing program in Realizing sustainable Development comparing to the Sustainable Development Goals (SDGs) of goas number 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation, and Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable. The model of ANP of this the role of islamic banking financing for afforadable housing in realizing sustainable development: an Analytic Network Process (ANP) method as follow:

Figure 3. SDGs

Source: Data processed by the author, 2024

As reflected by figure 3, shows the interdependence relationship between criteria and alternatives that influence decision making in prioritizing SDGs. Based on the research results, there is an inner dependence relationship that occurs in nodes in one cluster that affects other nodes in the same cluster, including the following criteria green housing, protecting low-income people, reducing the number of slum houses, multiplier effects for economic, economic growth, sustainable urbanization affected by SDGs number 8, 9 and 11. In assessing and selecting optimization of the Role of Islamic Banking Financing for Afforadable Housing in Realizing Sustainable Development Goals by using Analytic Network Process (ANP) to make prioritizing policies in the Afforadable Housing program in Realizing Sustainable Development Goals in Indonesia. Based on the criteria and sub-criteria collected from experienced experts in Islamic Banking as Intermediary of affordable housing program to low-income people, there is an inner dependency and outer dependency relationship of afforadable Housing in Realizing Sustainable Development Goals.

Weighting of criteria and alternatives in assessment of to the Sustainable Development Goals (SDGs)

The evaluation of afforadable housing and Sustainable Development Goals (SDGs) is conducted by assigning weights to the criteria and options. Pairwise comparisons are employed to derive the relative importance of individual pieces inside a cluster, as perceived from the main cluster. The significance of pairwise comparisons is subsequently inputted into the data input, which is then processed using Super Decision Software version 3.2.0, as depicted in figure 4. Respondents are deemed to be consistent if the value of the consistency ratio (CR) is less than or equal to 0.1 (≤ 0.1).

Figure 2: Comparison of the criteria for nodes in the cluster and the alternatives for nodes in the cluster

No	Criteria	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Criteria
1	Green Housing															●			Protecting low-income people
2	Green Housing																●		Reducing the number of slum houses
3	Green Housing									●									Mulplier Effects for Economic
4	Green Housing									●									Economic Growth
5	Green Housing									●									Sustainable urbanization
6	Protecting low-income people									●									Reducing the number of slum houses
7	Protecting low-income people	●																	Multiplier effects for economic
8	Protecting low-income people																●		Economic Growth
9	Protecting low-income people	●																	Sustainable urbanization
10	Reducing the number of slum houses	●																	Multiplier effects for economic
11	Reducing the number of slum houses	●																	Economic Growth
12	Reducing the number of slum houses	●																	Sustainable urbanization
13	Multiplier effects for economic									●									Economic Growth
14	Multiplier effects for economic									●									Sustainable urbanization
15	Economic Growth									●									Sustainable urbanization

Source: Data processed by the author, 2024

The outcomes of data processing through the Analytic Network Process (ANP) utilizing Super Decision Software version 3.2.0, with unweighted super matrix weights, are displayed in follow:

Figure 3:Weight of The Unweighted Supermatrix.

Clusters	Nodes	Housing & SDGs	Green Housing	Protecting low-income people	reducing the number of slum houses	Multiplier Effects for economic	Economic growth	Sustainable Urbanization	SDGs 8	SDGs 9	SDGs 11
Goal	Housing & SDGs	1,000000	0,000000	0,000000	0,000000	0,000000	0,000000	0,000000	0,000000	0,000000	0,000000
Criteria	Green Housing	0,038176	0,000000	0,000000	0,000000	0,000000	0,000000	0,000000	0,048556	0,000000	0,000000
	protecting low income people	0,303559	0,000000	0,000000	0,000000	0,000000	0,000000	0,000000	0,202876	0,000000	0,000000
	reducing the number of slum houses	0,290961	0,000000	0,000000	0,000000	0,000000	0,000000	0,000000	0,430205	0,000000	0,000000
	multiplier Effects for economic	0,290961	0,000000	0,000000	0,000000	0,000000	0,000000	0,000000	0,047801	0,000000	0,000000
	economic	0,000000	0,000000	0,000000	0,000000	0,000000	0,000000	0,2		0,000000	0,000000

	growth	0,42707	0,0000	0,0000	0,0000	0,0000	0,0000		0,22761	0,0000	0,0000
	sustainable Urbanization	0,033635	0,0000	0,00000	0,0000	0,00000	0,00000	0,000000	0,047801	0,0000	0,0000
SDG	SDGs8	0,810270	0,0000	0,00000	0,0000	0,50000	0,00000	0,000000	0,0000	0,0000	0,0000
	SDGs9	0,189873	0,0000	0,00000	0,0000	0,50000	0,00000	0,000000	0,0000	0,0000	0,0000
	SDGs11	0,000000	0,0000	0,00000	0,0000	0,00000	0,00000	0,000000	0,0000	0,0000	0,0000

Source: Data processed by the author, 2024

In addition, the cluster criteria's priority weight is assessed for affordable housing and Sustainable Development Goals (SDGs) using Super Decisions software version 3.2.0, as follow:

Figure 4: The priority weight of the cluster criteria in The role of Islamic banking financing for afforadable housing in realizing sustainable development

Normal Cluster	Normalized by Cluster	Limiting
Protecting Low-Income People	0.24957	0.135626
Reducing the number of slum houses	0.18639	0.101293
Economic Growth	0.14162	0.076963
Multiplier Effects for economic	0.14126	0.076766
Sustainable Urbanization	0.14072	0.076472
Green Housing	0.14043	0.076312

Source: Data processed by the author, 2024

The highest priority weight criteria, with a value of 0.24957, was determined to be the Protecting Low-Income People sources based on the results of the normalized cluster weights. The criterion of Protecting Low-Income People

y was found to be the most significant among the others due to Reducing the number of slum houses, economic growth, multiplier effects for economic, sustainable urbanization, green housing. In addition, the reducing the number of slum houses criteria had a value of 0.18639, the economic growth criteria had a value of 0.14162, the multiplier effects for economic criteria had a value of 0.14126, Sustainable Urbanization criteria had a value of 0.14072 and the Green housing criteria had the lowest weight with a value of 0.14043.

CONCLUSION

According to report of Super Decisions software version 3.2.0, The Role of Islamic Banking Financing for Afforadable Housing In Realizing Sustainable Development: an Analytic Network Process (ANP) method is most influence to Sustainable Development Goals (SDGs) number 8 (eight): Promote inclusive and sustainable economic growth, employment and decent work for all. The highest priority weight criteria, with a value of 0.81013 comparing Sustainable Development Goals (SDGs) number 9 (nine) thru value 0.18987.

The affordable housing contributes low income people to more proseperity and the economic growth by generating employment opportunities in the construction industry and increasing demand for materials and services.

In order, the affordablitiy housing program and industri have significant multiplier effects and, in terms of its contribution to the Gross domestic product (GDP). the Gross domestic product (GDP) is the common indicator used to quantify the economic value produced through the production of goods and services within a country during a specific time frame. Additionally, it quantifies the revenue generated from said manufacturing, or the whole expenditure on end products and services (excluding imports). Furthemore, the afffordable housing program is often equally or more important than other key sectors, such as manufacturing.

The presence of stable and sufficient housing facilitates improved economic prospects by offering a physical place for home-based businesses and enabling households to allocate more time towards productive endeavors. As the important of the role of Islamic banking for low income people to obtain affordability housing program and realizing the Sustainable Development Goals (SDGs), therefore the further research is needed to explore the contribution of Islamic banking in affordable housing financing towards the objective of Islamic Law (Maqasid al Shariah) synchronization with the the Sustainable Development Goals (SDGs) by the many experts in the field of Islamic Financial Industry.

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